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FIBRE BOX INDUSTRY 1980 ANNUAL REPORT

FIBRE BOX ASSOCIATION

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THE CORRUGATED BOX INDUSTRY ... utilized 17½ million tons of paperboard in 1980, making it the largest single consumer of the paper industry's products in the United States. More than 100 corrugated shipping containers were used to ship the food, clothing and other products needed by every person in the country. These containers, valued at $9.1 billion, cost consumers only 1¢ for every $1 of value of their contents. While all other packaging materials—cans, bottles, jars, caps, labels, bags—cost an average of 5¢ per $1 of product value, no other packaging material was used for so many products. Some 800 companies operated the industry's 1,422 manufacturing plants in 47 of the 48 contiguous states, bringing a source of supply close to every customer.

THE FIBRE BOX ASSOCIATION ... is the national trade association for domestic manufacturers of corrugated boxes. Member companies, which produce almost two-thirds of the industry's total shipments, govern the Association's activities through a Board of Directors. Statistical, distribution, technical, employee relations, public relations and other services are provided to the member companies. The FBA represents U.S. box makers in the International Corrugated Case Association, which has members in 55 countries.

THIS ANNUAL REPORT ... includes the 40th annual presentation of statistical information on the corrugated box industry. Fibre Box Association members submit detailed information for the statistical programs. Non-member data is gathered in an annual voluntary census. Additional material is provided by the American Paper Institute, the Bureau of Labor Statistics of the U.S. Department of Labor, and the Bureau of Domestic Commerce of the U.S. Department of Commerce.

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1980:
Changing Patterns

Corrugated shipment growth rates have been gradually decelerating in the Northern states and accelerating in the South and West for more than 20 years.

In 1960, corrugated shipments from the Northeast, East Central and North Central parts of the country (statistical Areas 1, 3 and 4) comprised 63.2% of total shipments. By 1980, that number had dropped to 48.7%.

In contrast, the Southeast and South Central states (Areas 2 and 5) increased their share of shipments from 23.8% to 34.9%, while the Western portion of the country climbed from a 13.0% share to 16.4%.

It is important that we recognize the decline in share in the North as just that—a decline in share. It translates to slower growth, but growth nonetheless—in fact, a 71% growth in shipments over the 21-year period.

The South, meanwhile, experienced a growth of 224%, and the West gained 180%. Overall, industry growth for the period stands at a whopping 122%. These are important kinds of numbers to the managers of America's 800 corrugated box manufacturing companies and their 1,422 plants—and to their customers.

Productivity per converting plant increased 50% in that same span, a good record compared to other U.S. industry but less than half the shipment growth. To service its customers, more plants have been needed, and indeed there are 48% more converting plants today than there were in 1960.

A recent government study of U.S. population shifts from 1963 to 1976 showed some striking similarities to corrugated industry data. The Northern tier of states lost 6.9% of its share of manufacturing employees. During the same period, box shipments in the comparable Northern Areas lost 8.9% of their national share. The numbers are even closer in the South: share of manufacturing employees up 5.9%; and share of box shipments up 6.9%. The West's share of manufacturing employees was up 1%, and its share of box shipments was up 2%.

The government study goes on to analyze some of the shifts by industry. Food, for example—the largest customer of the corrugated industry—saw a 6.3% decline in share of employment in the North, a 4.3% gain in the South, and a 2% gain in the West.

Since different industries require differing amounts of labor for each product, and not all industries use corrugated boxes to the same degree, we would not expect the numbers to be identical. But they certainly have a high degree of correlation.

Corrugated industry shipments for 1980, however, were atypical, in that regional differences were exaggerated by economic forces. Once again, the South and West outperformed the North. But shipments in the North were disproportionately low because of the declines in the automotive and steel industries, and drops in major appliances related to declining housing starts. How much they will recover, and when, are short-term questions.

More importantly, will the long-term trends continue? Those who point to energy issues say yes, since Southern industry has lower heating needs. Others point to long-term water supplies and the abundant potential of the Great Lakes, maintaining that much industry will have to stay in, or return to, the North.

The critical nature of these regional shifts and trends to business decisions makes the data in this report especially important to the corrugated converting industry. To be of even greater help to its members, the Fibre Box Association has begun refining its shipment data for even smaller geographic units than in the past. Careful evaluation and planning will enable the industry to continue serving the needs of its customers throughout the country.

Donald C. Shepard

Thomas J. Muldoon

D C. Shepard

Donald C. Shepard
President

Thomas J. Muldoon

Thomas J. Muldoon
Executive Vice President

OFFICERS, DIRECTORS AND EXECUTIVE COMMITTEE

Directors are elected to represent their Areas (see page 11)

Name	Company	Representing
W. C. Akers	Akers Packaging Service, Inc.	Area 3
*H. E. Beeken	Westvaco Corporation	At-Large
*B. P. Bowen	Longview Fibre Company	At-Large
*E. E. Brotherton	Packaging Corporation of America	Area 4
R. L. Carr, Jr.	Sentinel Container Corporation	Area 6
*J. B. Collett	Weyerhaeuser Company	Area 6
J. P. Crown	The Lawrence Paper Company	Area 5
C. M. Dowd	Corrugated Paper Corporation	Area 1
J. Edelman	Greater New York Box Company, Inc.	Area 1
A. K. Gidwitz	Consolidated Packaging Corporation	At-Large
*M. M. Giffen	Manville Forest Products Corporation	Area 5
R. J. Glick	Owens-Illinois, Inc.	At-Large
*R. E. Guffy	Container Corporation of America	Area 6
W. D. Hensley	Mid-South Container Corporation	Area 2
*W. F. Hudson	St. Joe Container Company	Area 2
E. A. Jaffe	J & J Corrugated Box Corporation	Area 1
H. D. Kealy	Castle Rock Container Corporation	Area 4
*T. E. Kigin	Acorn Corrugated Box Company	Ex-Officio
J. F. Kindlon	Commander Packaging Corporation	Area 4
R. L. Kohlmann	Delta Container Corporation	Area 5
R. K. Kraft	Rand-Whitney Container Corporation	At-Large
R. S. Landaal	Flint Boxmakers, Inc.	Area 3
*P. M. Levine	Continental Forest Industries	Area 6
R. D. Love	The Love Box Company, Inc.	Area 5
J. W. McLeod	Lone Star Container Corporation	Area 5
C. F. McMahon	Loy-Lange Box Company	Area 5
*J. R. Meister	St. Regis Paper Company	Area 3
*J. H. Neale	Union Camp Corporation	Area 2
F. A. Northrup	West Virginia Packaging, Inc.	Area 2
*D. L. Page	Boise Cascade Corporation	Ex-Officio
*A. Clark Peters	Mead Containers	Area 3
*D. B. Pooley	Western Kraft Paper Group	At-Large
B. F. Ray	Key Container Company	Area 6
*M. Rosenkranz	Stone Container Corporation	Area 2
N. F. Sanger	Mohawk Containers, Inc.	Area 4
*L. C. Schiffenhaus	Schiffenhaus Packaging Corporation	Area 1
*C. Schweitzer	Georgia-Pacific Corporation	At-Large
*D. C. Shepard	Menasha Corporation	Ex-Officio
*J. D. Shine	AIM Corrugated Container Corporation	At-Large
R. E. Sommer	Lawless Container Corporation	Area 1
E. T. Turner	Wabash Fibre Box Company Division, The Weston Paper & Manufacturing Company	Area 3
S. R. Van Horne, Sr.	Corrugated Supplies Corporation	Area 4
R. E. Wainscott, Sr.	Durham Box Company, Inc.	Area 2
*F. J. Wakeman	Green Bay Packaging, Inc.	Area 4
*R. E. Wilson	Champion International Corporation	Area 6
*C. S. Wolf	York Container Company	Area 1

Donald C. Shepard,
President

Thomas E. Kigin,
First Vice President

David L. Page,
Immediate Past President

*Members of The Executive Committee

COMMITTEE CHAIRMEN

Ad Hoc Committee on Rule 41	G. B. Bonfield	Packaging Corporation of America
Design Competition Committee	B. P. Bowen	Longview Fibre Company
Distribution Committee	M. Rosenkranz	Stone Container Corporation
Employee Relations Committee	R. E. Guffy	Container Corporation of America
Environmental Committee	R. J. Glick	Owens-Illinois, Inc.
Finance and Planning Committee	D. C. Shepard	Menasha Corporation
Nominating Committee	D. L. Page	Boise Cascade Corporation
Packaging Study Committee	R. E. Wilson	Champion International Corporation
Pension Plan Committee	J. L. Gidwitz	Consolidated Packaging Corporation
Production Committee	F. J. Wakeman	Green Bay Packaging, Inc.
Sheet Plant Committee	J. D. Shine	AIM Corrugated Container Corporation
Technical Committee	D. B. Pooley	Western Kraft Paper Group

PRODUCTION AREA CHAIRMEN

Geographic units consisting of one or more Zones are used as a basis for meetings of plant production managers.

Northeastern	Leo Schwenzfeier	Oneida Container Company, Inc.
Middle Atlantic	Paul Koch	Republic Container Corporation
Southeastern	Paul Coppage	Union Camp Corporation
Great Lakes	John E. Rinderknecht	Nivison-Weiskopf Company
North Central	Donald Davis	Green Bay Packaging, Inc.
Mid-Central	W. W. Land	Champion International Corporation
South Central	Otis Statham, Jr.	Midland Container Corporation
North West	J. H. Alderson	Western Kraft Paper Group
South West	Glenn McKenzie	Menasha Corporation

STAFF

Thomas J. Muldoon, Executive Vice President & Secretary
Robert F. Rebeck, Vice President, Treasurer and Director of Employee Relations

Stanley R. Anderson, Director of Statistical Services
Henry J. Daluga, Director of Administrative Services
Alfred W. Hoffman, Technical Director
Ella M. Kummer, Assistant Treasurer
Louise D. Rosa, Art Director
David W. Rouleau, Director of Distribution
Thomas J. Serb, Director of Communications
Betty Sutor, Assistant Director of Employee Relations

COUNSEL

Martin R. Browning, John C. Cooper III
Whyte & Hirschboeck, S. C.

Board of Directors members reviewed the Association's financial statements during their October meeting.

FBA'S 40TH YEAR OF SERVICE

The Fibre Box Association celebrated its 40th birthday in 1980.

The national trade association was incorporated on October 18, 1940. The principal business office then, as now, was in Chicago.

Trade associations serving the corrugated industry date back to 1905. The FBA was formed when its immediate predecessor, the National Container Association, was dissolved.

Two-thirds of the original 73 member companies, or their successors, are members today. Only seven still operate under the same or similar names.

Companies which trace their membership throughout the FBA's entire history, either directly or through acquisitions, include: Champion International, Consolidated Packaging Corporation, Container Corporation of America, Continental Forest Industries, Diamond International Corporation, Georgia-Pacific Corporation, Green Bay Packaging, Inc., Lawrence Paper Company, Longview Fibre Company, Love Box Company, Loy-Lange Box Company, Mead Containers, Menasha Corporation, Owens-Illinois, Inc., Packaging Corporation of America, St. Regis Paper Company, Schiffenhaus Packaging Corporation, Union Camp Corporation, Western Kraft Paper Group, Westvaco Corporation and Weyerhaeuser Company.

When it was formed, the Association's principal staff function was to compile and disseminate industry statistics. A second area of service, that of representing the industry in packaging matters before the rail freight regulatory agency, was quickly added. Technical assistance to members, along with a coordinating function in seeking solutions to broad technical problems, came next. A broad range of other services—production, employee relations, safety, public relations and others—have been added, making the FBA a source and resource for almost every phase of the industry's operations.

With total member involvement, a chronicle of Association activities touches on the full range of industry concerns. These were the highlights of 1980:

STATISTICS

The Association's statistical reports, originated in 1940, are regarded as being among the most accurate in the country. Built on a firm base of historical data, the program is nevertheless flexible enough to respond to changing management needs. Several 1980 changes are reflected in this Annual Report, while others affect future reports and internal data.

Computerization

The Association purchased a multi-purpose minicomputer in 1980, and transferred plant-by-plant data for 1979 and 1980 to its memory bank.

While computers are somewhat less flexible than manual operations, the great advantage to the members is speed. More data can now be generated and disseminated in less time, and with a slight reduction in staff.

Revised Regions

The introductory letter to this report noted the increasing importance of data for smaller geographic marketing regions of the country. After lengthy study by an Ad Hoc member committee, a major change from the 19 statistical Zones was implemented in October of 1980. The new reorganization replaces the Zones with 45 smaller Regions of the country.

Each new Region follows the boundaries of one or more of the government's Bureau of Economic Analysis (BEA) Areas. There are 183 such areas, each with the components necessary for a self-contained economic base. An average of four BEA areas have been combined into each new FBA Region. Box shipment data can now be correlated with government area business trends.

Each new Region, identified by its principal city, will average about 2% of national shipments, with a range from about 1% to as much as 5%.

With the change to the 45 Regions, it was necessary to modify the boundaries of four of the traditional Zones and three of the larger Areas for the tables shown in this report. Historical data was reconstructed accordingly.

Price Trend Index

The corrugated price trend data published by the Association has been a simple average—total value of all sales divided by total square footage. It meant very little in and of itself. Its value lay only as a historical review of rate and direction of change. Until this year it was expressed as both dollars per msf and on an index basis to simplify comparison with the Bureau of Labor Statistics' Producer Price Index.

To concentrate attention on the fact that it is only an indicator of the rate and direction of change and a means of making a comparison with government data, the dollar figure was dropped in 1980, leaving only the index number. At the same time, since monthly fluctuations tend to be heavily distorted by seasonality, a switch to a quarterly basis was put into effect. These two changes are reflected in this report.

Another 1980 event may lead to further changes in the future. In April, the government refined and expanded the data it collects on box prices for inclusion in the Producer Price Index. This new data will be watched closely for comparability and, if it is favorable, this portion of Association effort could be phased out and government data used instead.

DISTRIBUTION

The Association's Distribution activities are concerned primarily with keeping members informed about proposed changes in packaging regulations and, when appropriate, testifying at regulatory hearings on behalf of the industry. These were some of the specific activities and issues of 1980:

Bulletins

During the year, 39 *Distribution Bulletins* were issued to members on rail and truck packaging regulations, hazardous materials packaging and on events concerned with deregulation.

Three items reviewed in these Bulletins stood out as having substantial impact on affected box makers and their customers: the authorization of 150-lb. test board for relatively small packages (30-lb maximum gross weight) in the rail and truck packaging regulations; a change in hazardous materials warning label requirements which permits the printing of fewer colors in certain cases; and the retention of two hazardous materials containers which the U.S. Department of Transportation had considered dropping.

In addition, the Association proposed changes to simplify or clarify the regulations and communicated the industry's views in connection with proposals made by other parties.

Publications

The popular *Certification Manual*, published in 1979, became a virtual sellout in 1980. Reissue is planned in 1981.

A new manual in process, the *Fibre Box Red Book*, is designed to fit the particular needs of a boxmaker in fabricating shipping containers for hazardous materials. It contains, in easy-to-read form, the complete specifications for containers that can normally be manufactured by a boxmaker. In addition to paraphrasing or quoting the regulations and various interpretations, the material is heavily referenced to the actual regulations. The book, to be published early in 1981, will be updated quarterly through the issuance of revised pages.

Workshops

Another 74 people attended the 1980 series of Packaging Workshops, bringing the total in just five years to almost 500 industry designers, specification writers, customer service representatives, and technical and transportation specialists. The sessions concentrate on the selection, proper construction and marking of corrugated containers to comply with applicable requirements.

The first workshop, General Packaging Regulations, is a shirtsleeve course on the technical box construction aspects of rail Rule 41 and truck Item 222. It also covers the use of the classifications to determine the authorized packaging for any commodity.

The second workshop, Packaging of Hazardous Materials, covers applicable portions of the DOT's hazardous materials classifications and regulations, including box specifications, labels and label colors, markings, exemptions, procedures and interpretations.

ConRail Surcharges

Collection of a $280-per-car surcharge on linerboard and corrugating material shipped from the South to points served by ConRail, instituted in 1979, continued into 1980. Only 19 days into the year, ConRail also started collecting $125 surcharges on cars coming out of the Southwest. Meanwhile, objections filed by the Fibre Box Association and many others caused the Interstate Commerce Commission to conduct an investigation of the surcharge issue. The ICC subsequently found all the surcharges unlawful, and ordered refunds.

Later in the year, however, President Carter signed the Staggers Rail Act of 1980 which legitimitized surcharges but put various restrictions on them. ConRail is expected to utilize this provision extensively.

Packaging Regulations

Bills which materially affected the level of regulation of motor carriers and railroads were passed and signed into law in 1980. Among the many provisions they amended was the limited antitrust immunity which had permitted the carriers to meet and agree upon rates, rules and regulations. The new laws were designed primarily to restrict the rate-making activity, but the collective establishment of packaging regulations was also affected.

When the bills were being debated, FBA's Director of Distribution testified that uniform packaging regulations were beneficial to all, and that the ability to jointly establish and amend them should be retained. The laws which ultimately passed did give some recognition to this concept. However, new restrictions have created some administrative problems, which the Association is helping to resolve.

Joseph W. Schiffenhaus (right), Chairman of Schiffenhaus Packaging Corporation, was honored for 55 years of service to the corrugated box industry during the 1980 Spring Meeting. David W. Page presented a plaque to mark the occasion.

TECHNICAL

The Association's Technical Committee is concerned with all technical developments which might affect the production, shipment or proper usage of corrugated and solid fibreboard and boxes.

Some of the Committee's 1980 projects involved on-going activities, such as the monitoring of federal specifications emanating from the General Services Administration. Others are concerned with specific items, such as the recommendations of the Society of American Florists on box standardization. One of the year's *Technical Bulletins* was devoted to this subject.

Other significant 1980 Committee activities included:

- ***Slip Sheets.*** Final approval was given to a standard on slip sheets, subsequently issued by the American National Standards Institute. The document provides definitions, styles and test procedures. Several FBA Technical Committee members served on the ANSI Committee which developed the standard.

- ***U.S. Department of Agriculture Policy on Corrugated Boxes.*** The USDA instituted stringent policies early in the year with respect to coatings on corrugated fibreboard boxes and the recycled fibre content of containerboard. Working with the Fourdrinier Kraft Board Group, the FBA Technical Committee is monitoring the effect of the policies and is developing approaches to the issues.

- ***Testing Course.*** The Fibre Box Association initiated a two-day Box and Component Testing Course in 1979, and its success led to a follow-up course in 1980. George G. Maltenfort, a TAPPI gold medalist, served as organizer and chief lecturer.

Major Committee efforts were also devoted to: distribution symbology; restructuring of rail and truck packaging specifications; the performance of lettuce boxes; and the comparability of test results.

Distribution Symbology

A coding system which will facilitate universal identification of shipping containers for warehousing, distribution, production and inventory control has been difficult to achieve. The broad problem has been to develop a symbology which could be read by scanners and yet be compatible with conventional corrugated printing capabilities.

After several years of testing and analysis, an inter-industry Distribution Symbology Study Group, which included three members of the FBA Technical Committee and the FBA Technical Director, issued the first drafts of its recommendations in 1980.

When the final report is issued in the near future, actual implementation can begin. It is expected that, ultimately, the distribution symbol will be as commonplace as the Universal Product Code (UPC) on consumer packages.

Restructuring of Rule 41/Item 222

Work continued in 1980 on restructuring the corrugated fibreboard specifications in both the railroad and motor freight classifications. The objective is simple but the implementation is complex. The goal is to arrive at an optional alternative set of requirements which would define corrugated fibreboard in performance terms.

The current thinking is to require combined board bursting strength (at a lower level than in current specifications) and, in addition, a minimum combined board edge crush. It is probable that minimum combined board basis weight may also be stipulated.

The difficulty will be to develop test levels which are meaningful and which the industry can meet. This will require extensive study, and the effort is now underway.

Lettuce Boxes

The Iceberg Lettuce Research Board sponsored a study of lettuce boxes by the University of California—Davis which, in its 1979 reports, called for unusual test methods and unconventional conditioning. The Fibre Box Association pointed out these shortcomings and volunteered its help in a program to evaluate box quality. The first measures in this program were undertaken in 1980.

Test Comparability

In 1980 the Fibre Box Association, working in conjunction with Collaborative Testing Services, Inc., drafted a new FACTS program which will allow boxmakers to periodically check the accuracy and uniformity of corrugated board tests. The program, to be initiated in 1981, will include comparison of busting strength, flat crush and edge crush tests on standardized samples of combined board supplied to the participants. Test results, along with details on equipment, methods and other factors, will be submitted by each laboratory and, in return, a report will be issued consisting of a complete printout of test averages and standard deviations for all participants. Code numbers will preserve anonymity.

The Technical Committee will monitor the reports and suggest appropriate expansion or modification of the program.

PRODUCTION

The program of Production Managers meetings in each of nine areas of the country on a semi-annual basis is constantly reviewed by the Production Committee. Among the frequent meeting topics of 1980 were energy and energy conservation, roofing maintenance, continuous run corrugators and hazardous waste disposal.

The year 1980 also saw the fifth presentation of a Production Managers Development Program. This five-day activity instructs registrants in the responsibilities and tools of management.

Other 1980 production activities worthy of note included:

Workshops

In March of 1980 the Association sponsored a day and one-half program on energy and energy conservation in the box shop. Topics included energy availability through the remainder of the century, decoding an electric power bill, reporting energy consumption to the government, incremental pricing, the cold corrugator, and conservation measures involving motors, lights, air compressors, boilers and steam distribution systems.

The workshop was so successful that plans were immediately formulated for a 1981 session, with corrugated waste control as the selected subject.

Noise

In addition to its regular noise abatement program, the Association contacted OSHA on behalf of the industry regarding proposed new regulations on noise levels in the workplace. Three things were requested: 1) provide more time for comment; 2) repropose the original rule draft, so that new data could be submitted; and 3) permit the use of hearing protection devices as an accepted means of protecting workers in high noise areas. A time extension was granted, and industry efforts are continuing.

PCBs in Electrical Equipment

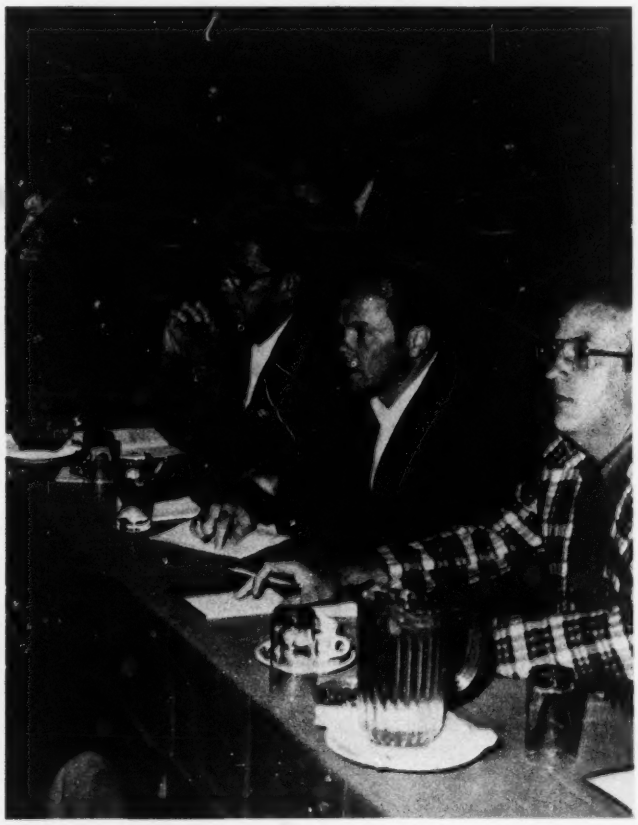
The Food & Drug Administration issued a proposed rule in 1980 to prohibit or limit the amount of polychlorinated biphenyls (PCBs) in sealed electrical transformers and capacitors used or stored in or around food, feed, and food- and feed-packaging manufacturing plants or storage facilities. The Association, after conducting its own fact-finding survey and cooperating in another sponsored by the American Paper Institute, pointed out to FDA that the calculated risk of contamination was infinitesimal and that the financial burden on the industry would be onerous.

Early in 1981, FDA shelved its proposal. The Environmental Protection Agency, which had a parallel program, modified it to incorporate monitoring safeguards and other less costly but fully adequate measures for all manufacturing plants.

Flexo Ink Wastes

In May, the Environmental Protection Agency issued a massive compilation of regulations defining and governing hazardous wastes and their disposal. The agency indicated that it planned to list the wash water from flexo printing operations in corrugated plants as hazardous before the year ended.

Surveys were conducted among the membership concerning flexo ink wash-up wastes. Analytical data on flexo sludges were also compiled. Additionally, the data on which the EPA was basing its plans were analyzed and found to be in error. All of this, along with the gradual swing of both ink suppliers and box shops to low-lead inks, was reported to the Environmental Protection Agency. The result was a reversal by EPA, which currently plans no actions or studies which would affect the corrugated industry.



Members attending the Association's 1980 Spring Meeting in Phoenix, Arizona, listened closely to a capsule version of the Energy Conference.

ENVIRONMENTAL COMMITTEE

Many problems such as noise exposure, PCBs in electrical equipment and flexo ink waste sludges had been handled by Ad Hoc Sub-Committees of the Production Committee. However, because of the increasing number of industry problems which are related to the environment, an Environmental Committee was established by the Association on a standing basis late in 1980. This new group will act as a technical service to other Standing Committees and will work on air, water, solid and hazardous wastes and chemical substances which have an affect on health. Also within its province is noise, not from an engineering abatement viewpoint but from that of effects on health.

PACKAGING STUDY

The Association regularly monitors the package test shipping permits issued by the rail and truck classification agencies. Those permits which can indicate trends in corrugated usage have in the past been reported to the Packaging Study Committee for analysis and recommendations.

Greater dissemination of the permit survey information was urged, and a new report called *Innovations in Packaging* was started in 1980 for that purpose. The summary, including expert analysis, is now sent to all member plants twice each year.

EMPLOYEE RELATIONS

One of the Association's important activities is Employee Relations. The reasons are fairly obvious. Besides being capital intensive, the corrugated industry is also highly labor intensive. As in nearly all other segments of American industry, wage gains relative to productivity improvements are of great concern.

Safety and health are also an integral part of the Employee Relations programs. The Association and its members are dedicated to the objective of providing a workplace for the employees of this industry where risks of injury are minimized.

The Association's efforts in these areas covered a wide range of activities in 1980. The major efforts, and some of the results, are described below.

Conference and Seminars

The Fibre Box Association and the American Paper Institute jointly sponsored their 21st annual Employee Relations Conference in 1980. The Conference theme, "Emerging Employee Relations Issues of the '80's," was carried out in presentations by prominent figures from the paper and other industries and from government agencies.

Prompted by the high incidence of back injuries throughout all industries, a Back Injury Prevention Seminar was conducted for Association members in May by Health Education Systems.

The Association's second annual Safety and Health Seminar was conducted in October. Dealing specifically with box plant operations, it included such subjects as accident investigation, new safety equipment, machine guards, and self insurance plans.

Labor Data

At the beginning of each year, the Association distributes to its members a *Bargaining Calendar* of contract expirations. *Wage and Fringe Spread Sheets* offer a concise abstract of the principal feature of each contract negotiated during the preceding year. Complete details of new settlements are available to members who participate in this exchange in *Labor Data Sheets*.

The major details of contract settlements are also reported to members in the semi-monthly *Labor Bulletin*. This publication also covers strikes and strike issues, and other information of interest and importance in the employee relations field such as activities of the NLRB, EEOC and the courts. These were some of the highlights of the 1980 labor information:

First-year general wage increases reported by FBA members during 1980 averaged 8.9%. This compares with a median increase of 9.0% reported by the Bureau of National Affairs for all manufacturing industries. It was also pretty well in line with the average general wage increase negotiated by paper and paperboard mills.

Strike activity last year was at a very low level. Only five member company plants reported strikes in 1980, ranging in length from a few days to two months. A large nonmember company, however, experienced strikes at 13 of its locations. Economic conditions undoubtedly affected the attitudes of both labor unions and management in contract negotiations, resulting in the minimal number of strikes—a phenomenon which was not unique to the corrugated industry.

Safety Publications & Materials

A monthly *Safety and Health Bulletin* was initiated several years ago to inform member company safety personnel about such matters as regulations, safety inspections and other regulatory actions. Safety tips and experiences which could prove helpful to other industry members are also exchanged in this publication.

In the area of data compilation, reports from each member plant are summarized in the *Annual Report of Occupational Injuries and Illnesses*.

The *Bulletins* and *Annual Report* are essentially safety management tools. In an effort to provide material directly for employees, an audio-visual presentation, "Box Plant Safety: A Shared Responsibility," was produced by the Association in 1980. Primarily directed toward new employees coming into a box plant for the first time, it emphasizes the need for safe practices on the job. Sections of the presentation can be used individually in shorter follow-up safety meetings on such subjects as "Housekeeping," "Proper Attire," and "Use of Tools and Equipment." The program, consisting of a set of 35mm slides, a cassette tape and a script, is available in Spanish as well as English.

Safety Poster Contest

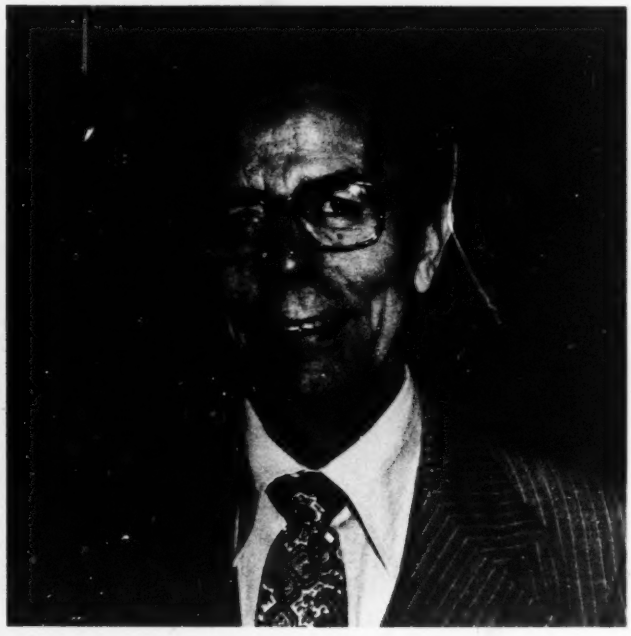
Close to 200 entries from 36 member companies were submitted in the Association's second Safety Poster Contest, held late in 1980. This was more than double the number of entries received in the first contest.

Designed to stimulate employee involvement in safety programs, the contest was open to all persons employed in FBA member company plants and members of their families. Ideas were submitted for judging by safety specialists, and prizes were awarded to the winners. These ideas, developed into finished posters by graphic artists, will be printed and distributed to FBA member companies for display during 1981.

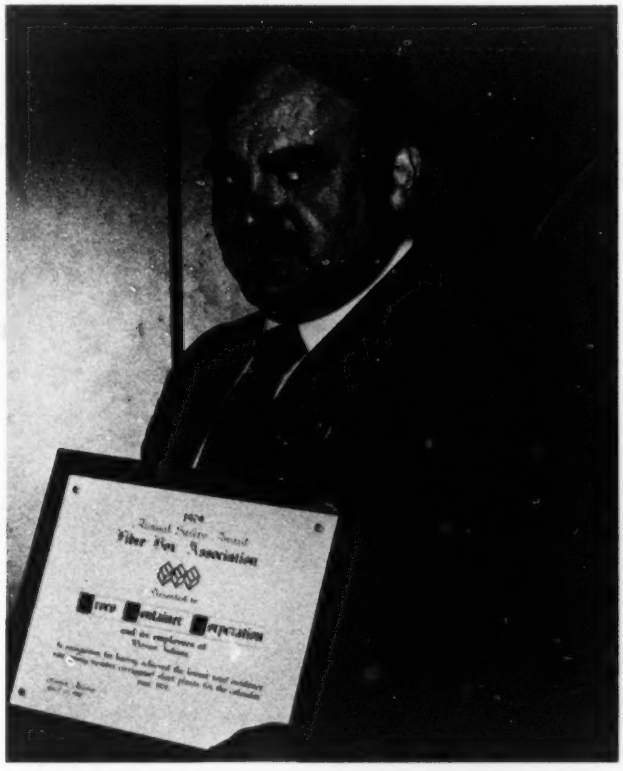
First prize in the 1980 contest was won by Carl H. Friede, an Apprentice Commercial Artist at Schiffenhaus Packaging Corporation's plant in Newark, New Jersey. Second prize was awarded to Bette Gillespie, a Staude Operator at Western Kraft Paper Group in Elk Grove Village, Illinois. Third prize honors went to James D. Eames, Jr., son of James D. Eames, Sr., with the Printing Department at Continental Forest Industries in Martinsville, Virginia. Nine other entries received Honorable Mention Awards.

Safety Awards

As an inducement to improve plant safety records, the Association continued its safety award program in 1980. Calendar year



John H. Erbe, Director of Employee Relations and Production Area Secretary, retired from the Association staff in November. He was honored for his 42 years of service at the Annual Meeting.



Steven L. Bolinger, General Manager of Arvco Container Corporation's facility at Warsaw, Indiana, accepted the Association's Sheet Plant Safety Award during the Spring Meeting.

awards were presented to 55 plants which achieved zero lost work day incidence rates. Seven plants were recognized for completing 250,000 work hours with zero lost work day incidence rates, and three plants were given safety excellence awards for maintaining zero rates for a period of 500,000 hours of operation.

Annual awards were presented in several categories at the Association's Spring Meeting for plants achieving the lowest total cases incidence rates. The sheet plant winner was Arvco Container Corporation's plant at Warsaw, Indiana. Converting plant honors went to: the College Park, Georgia, plant of St. Joe Container Company for having the lowest rate among plants operating less than 200,000 hours; Republic Container Corporation's plant at Jersey City, New Jersey, with the lowest rate in the 200,000 to 400,000 hours-of-operation classification; and the Carol Stream, Illinois, plant of Container Corporation of America, with the lowest total case incidence rate among converting plants operating more than 400,000 hours.

COMMUNICATIONS

The Association's public relations and internal and external communications efforts are coordinated by the Communications Department.

Daily activities in 1980 ranged from answering school children's letters to writing the basic article on corrugated for the *Modern Packaging Encyclopedia*. Some 50 press releases were issued on industry statistics, environmental issues and other subjects, and frequent contact with editors was supplemented with background briefings in several cities.

Publications and materials issued by the staff included: the *Annual Report*, the *Abstract Bulletin*, which summarizes pertinent magazine articles of interest to members; *Government Update*, a periodic newsletter on pertinent legislation and regulations; *FOCUS*, a monthly slide/script newsletter covering current statistics and major issues; and *Corru-Facts*, a series of educational brochures on box usage intended for distribution by members to their customers.

The department also handles the preparation, production, promotion and sale of such items as the *Fibre Box Handbook* and most of the Association's audio-visual programs, and the preparation of industry exhibits.

PMMI Exhibit

A 720-square-foot exhibit was developed to represent the corrugated container industry at Pack Expo '80, the international packaging show sponsored by the Packaging Machinery Manufacturers Institute. The October event, in Chicago's McCormick Place Exposition Hall, was visited by 32,000 buyers and users of packaging, plus the 7,000 men and women who staffed the 550 exhibits.

The Association's exhibit featured the boxes and display stands selected as Gold Award winners in the 1978 Box Design Competition. Pictures, diagrams and miniature samples were displayed on a series of wall panels to show how boxes are designed and made. Another section of the exhibit featured slide presentations on the industry and on a wide variety of prize-winning box designs. The Association staff, supplemented by many member volunteers, helped to answer visitors' questions during the five-day show.

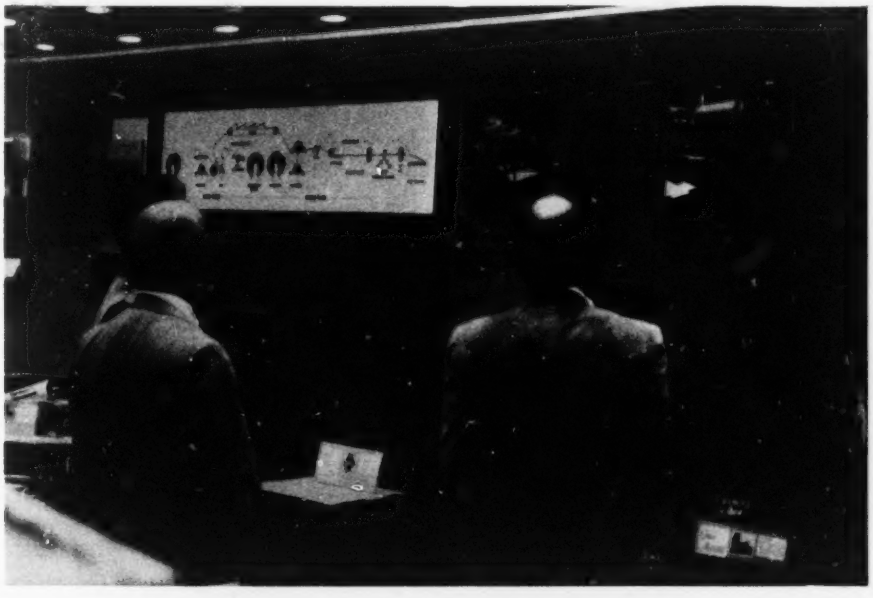
Design Competition

The Association's first Design Competition was held in 1953. The earliest events were displayed only at Association meetings. Beginning in 1974, and again in 1978, all of the entries were displayed to packaging users in 7,500-square-foot exhibits at the PMMI Show.

Preliminary budget approval was given in 1980 to prepare for the Association's 12th Box Design Competition in 1982. Arrangements have already been made to display all of the entries at PMMI's Pack Expo '82, and a Committee has been formed to begin the planning process.

SHEET PLANT SERVICES

The annual two-day Sheet Plant Workshop, held in January, 1980, brought operators together to discuss a wide range of topics. First-day presentations concentrated on financial areas such as estate and financial planning, employee stock ownership plans, and determining the value of a private business. The second day's subjects included legal developments, human relations in business, labor relations, and management techniques.



One segment of the Association's exhibit at Pack Expo '80 described, in photos and actual samples, the story of the corrugated box manufacturing process.

Plans were made later in the year for the 1981 session, featuring special presentations on sheet plant productivity measurement, financial statements, and sales compensation and sales training.

These Association events are the only workshops of their kind tailored to corrugated sheet plant operations.

Separate sessions for these operators were also held during the Association's Spring and Annual Meetings. The Spring session included an in-depth discussion of inflation accounting methods which might be required of small companies in the near future. Industry statistics were broken down in detail at both sessions to compare sheet plant and converter performance, while wage and fringe benefits offered by 86 sheet plants were analyzed at the Annual Meeting session.

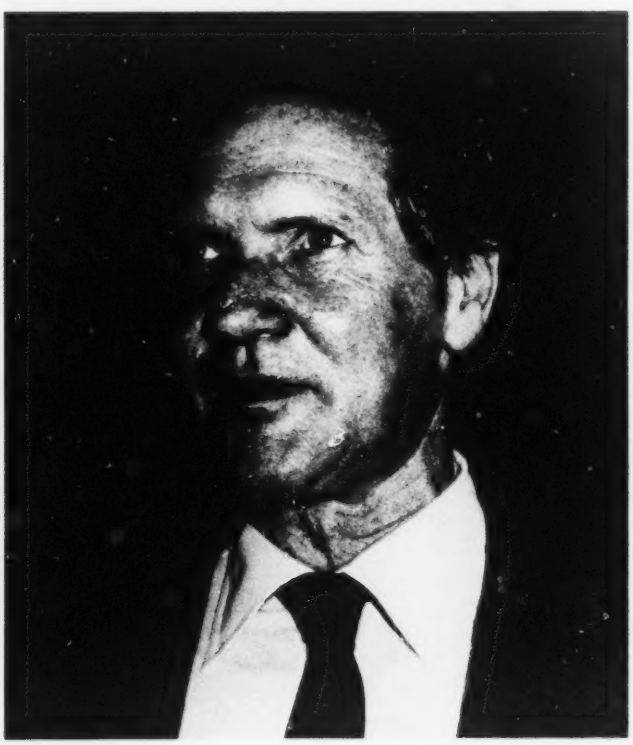
Special studies were also conducted in 1980 to analyze other potential programs and activities the Association might undertake on behalf of smaller members. Several of the suggestions are being studied for possiblle implementation.

OTHER PROGRAMS & ACTIVITIES

The wide-ranging interests and concerns of the corrugated industry lead the Association to involvement in many other areas. Some of these activities in 1980 included:

International Cooperation

The Fibre Box Association represents U.S. boxmakers in the International Corrugated Case Association, which in turn has members in 55 countries. The FBA coordinates all activities for North and South America, and plays an active role in the planning of ICCA meetings. In 1980, this included preliminary planning for the Fifth International Management Conference, to be held October 5-9, 1981, in Osaka, Japan.



Fred W. Schober, president of the International Corrugated Case Association and director of Hch. Sieger in West Germany, reviewed European corrugated industry trends for Annual Meeting attendees.

Solid Waste

As a founding member of the Solid Waste Council of the Paper Industry and an active member of the National Center for Resource Recovery, the Association represents the industry in both fostering the recycling of used corrugated containers and in researching the technical aspects of recovery and re-use. This involvement has frequently led to the legislative and regulatory arena, where the availability of research data—or the lack of it—can be a major concern.

To compile data in one specific area, the Solid Waste Council commissioned a 1980 study of municipal garbage in a major city. The data clearly shows that packaging, and specifically paper and paperboard packaging, comprises a smaller portion of the total than government estimates had indicated. Results of the study, to be disseminated in 1981, can be used as evidence on such matters as packaging taxes which may again be proposed as a means of funding solid waste disposal.

Financial Survey

Throughout the early and mid-1970's, the Association sponsored *Financial and Manpower Studies* among participating members. A great deal of discussion in 1980 resulted in the decision to revive these studies in 1981, on a less complex basis. Once again, Arthur Andersen & Company will compile the data to preserve confidentiality, and the results will be made available only to participating members. Separate studies will be conducted of converting plant and sheet plant operations.

Membership Information & Recruiting

Revision of the booklet *The Fibre Box Association: What It Is... What It Does* was undertaken in 1980 so that all member company personnel would have a handy reference to the many services available. While most of FBA's activities are on-going, the many changes reflected in this and prior *Annual Reports* were brought together in this single document. Publication was set for early 1981.

At the same time, plans were developed to launch a major membership drive in 1981. A series of four brochures was developed, revealing in sequence much of the story of the Association's services. The *What It Is* booklet will then be used to provide in-depth details.

Sheet plant operators gathered for a review of major trends and a Workshop planning session during the Association's Annual Meeting.

STATISTICAL REGIONS

AREAS & ZONES

The Fibre Box Association has divided the United States into six Areas for statistical purposes, and they are subdivided into 19 Zones. The Zones, established at various times, are not all in geographic/numerical sequence. The boundaries of Zones 9, 12, 13 and 18 and, consequently, of Areas 4, 5 and 6 were modified in 1980. Details of the modifications are available from the Fibre Box Association.

Area 1–Northeastern–Zones 1, 2, 3 & 4
Area 2–Southeastern–Zones 10, 11 & 19
Area 3–East Central–Zones 5, 6, 7 & 8
Area 4–North Central–Zones 9 & 13
Area 5–South Central–Zones 12, 15 & 16
Area 6–Western–Zones 14, 17 & 18

PRODUCTION AREAS

A different geographic organization, based on the Zones, is used for meetings of plant production managers.

Northeastern–Zones 1 & 3 (Part of Area 1)
Middle Atlantic–Zones 2 & 4 (Part of Area 1)
Southeastern–Zones 10, 11 & 19 (Area 2)
Great Lakes–Zones 5, 6 & 8 (Area 3)
North Central–Zones 9 & 13 (Area 4)
Mid-Central–Zone 12 (Part of Area 5)
South Central–Zones 15 & 16 (Part of Area 5)
Northwest–Zones 14 & 18 (Part of Area 6)
Southwest–Zone 17 (Part of Area 6)

STATISTICAL HIGHLIGHTS

RAW MATERIALS

Production of paper and paperboard in the United States declined 1.9% in 1980. The largest single product category, domestic containerboard for corrugated boxes, was down 1.8%, while export grades—part of the 'All Other' category—were up 36%.

The increase in exports kept overall containerboard mill production at the 96% level in 1980, with linerboard at 97%. These figures were essentially unchanged from 1979.

Current mill forecasts indicate that linerboard demand will exceed capacity in 1983. However, some additional capacity may become available by then.

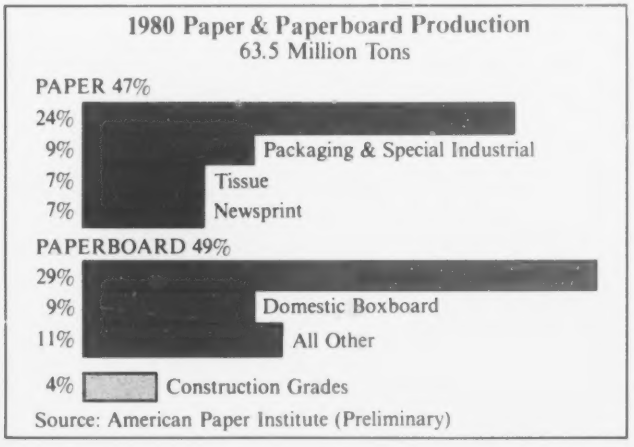
Corrugating material—the portion of containerboard not shown in the chart below (except as the difference between Linerboard and Total)—remains in adequate supply, with an expected operating rate of 96% in 1983.

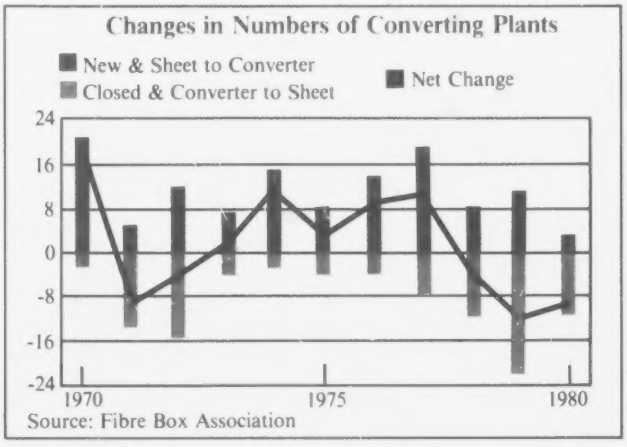
INDUSTRY FACILITIES

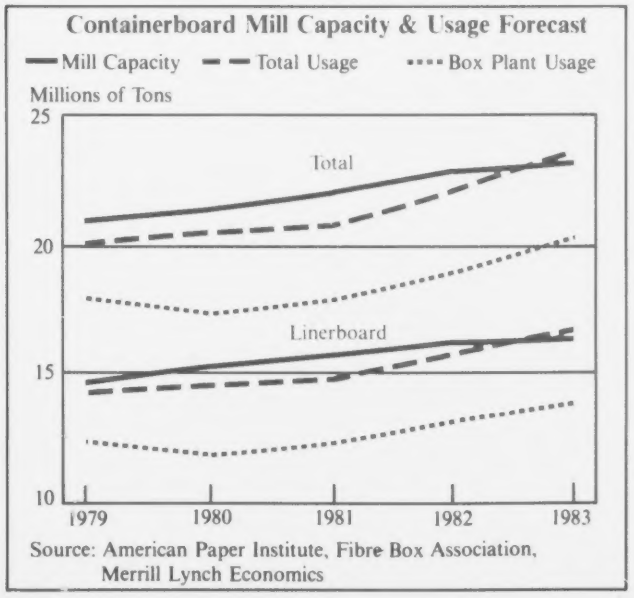
The trend toward increasing corrugated box plant productivity was slowed in 1980, but only slightly thanks to the continuing trend toward the closing of marginal facilities. The net number of converting plants in operation declined by nine during 1980, bringing the total increase for the past 11 years down to just 20 plants.

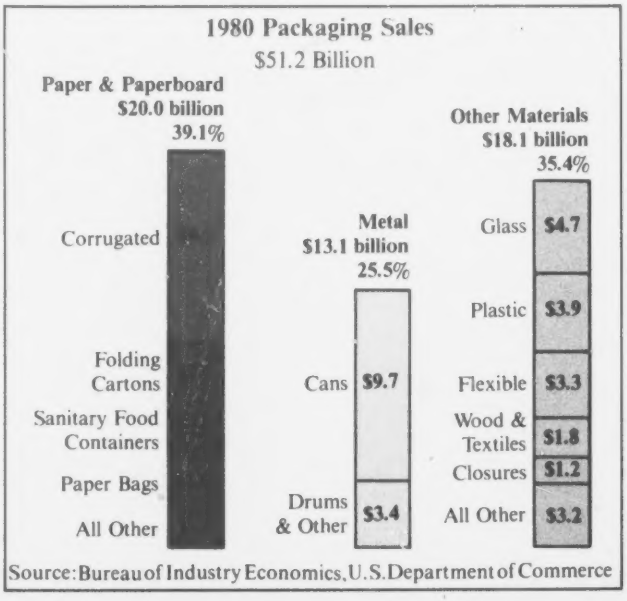
PACKAGING SALES

Despite small declines in physical volume for virtually every packaging material, inflation-pushed prices increased total sales by some 8%. Corrugated containers and metal cans tied for the lead, with all other materials far behind. Government figures, due to methodology, continue to run higher than FBA and other industry data.









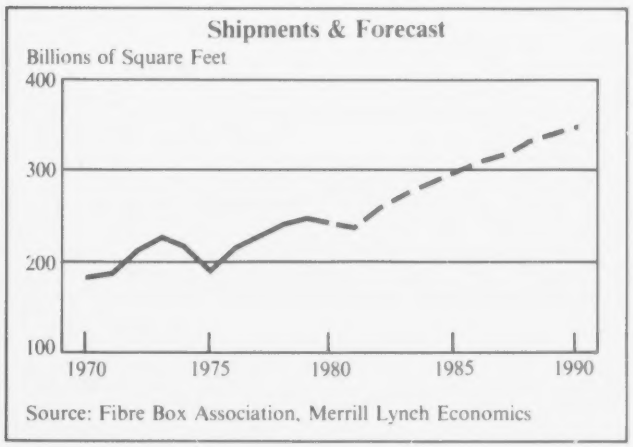
SHIPMENTS

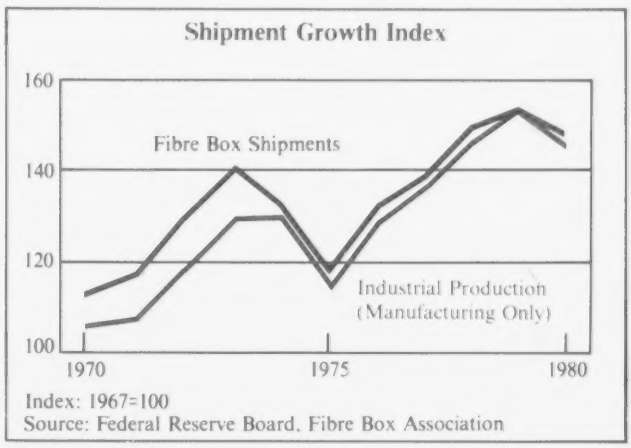
Corrugated's volume declined by 3.7% in 1980, to 241.4 billion square feet. The latest forecasts point toward strong recovery over the next two years, and then continued long-term growth of 3-3½% per year.

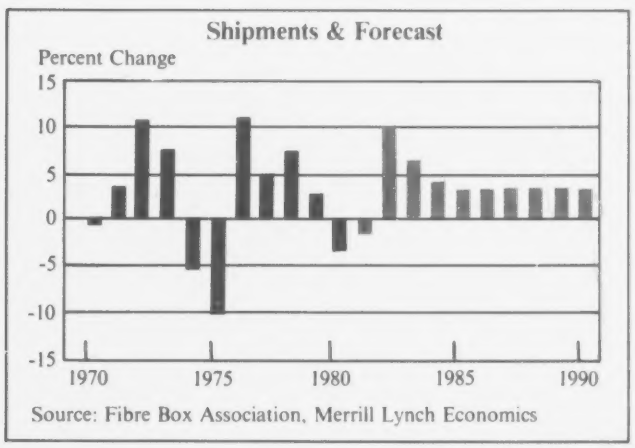
Shipments continue to track closely with the Manufacturing segment of the Federal Reserve Board's Index of Industrial Production, indicating no build-up of packaging inventories.

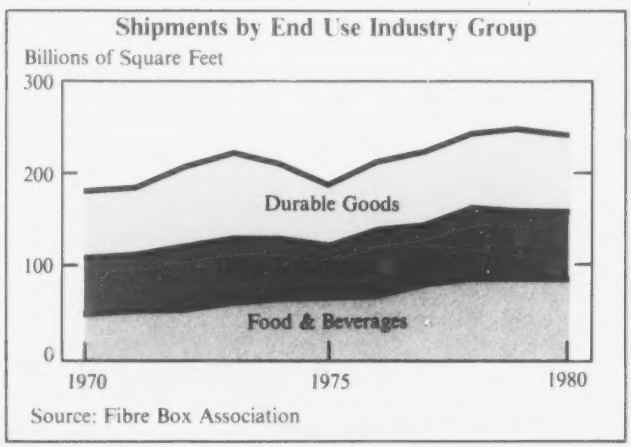
Over the past decade, corrugated volume used for food and beverage products increased from 28 to 37% of the total. The share used for other nondurable goods remained virtually unchanged, at about 30%, while the share for durable goods declined from 42% to 32%. Physical volume for durable goods, however, remained the same.

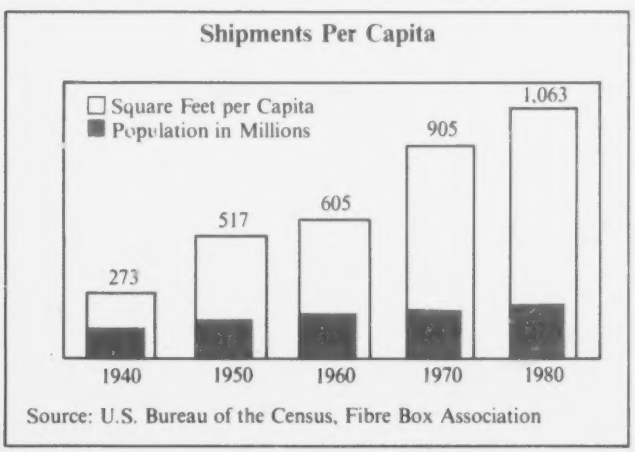
The pattern of regional shipment changes presents a striking similarity in recent years, with the strongest growth in the Southeast and the weakest performance in the East Central states.

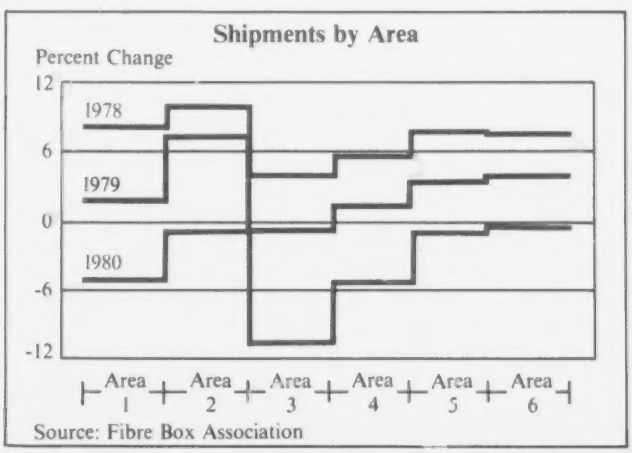




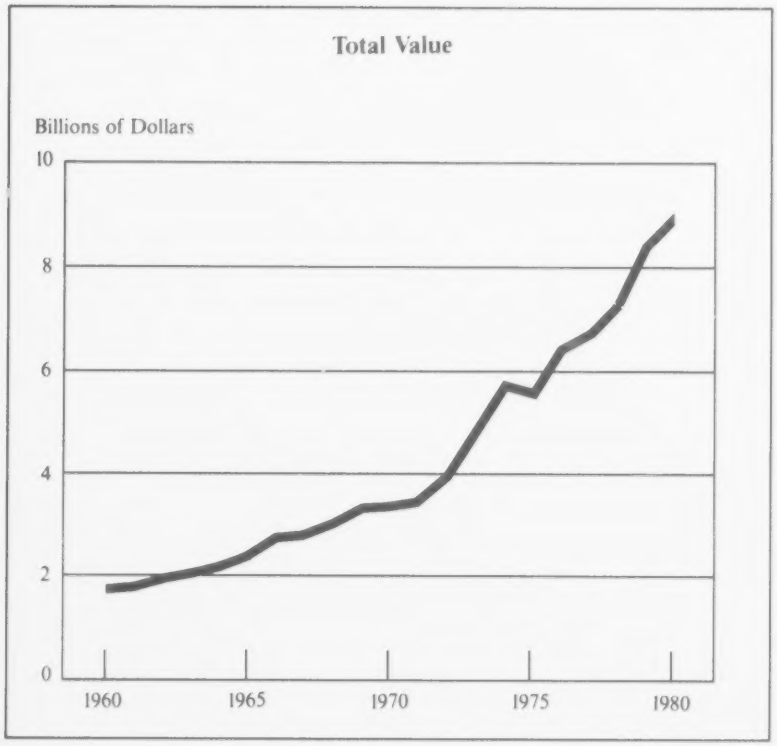


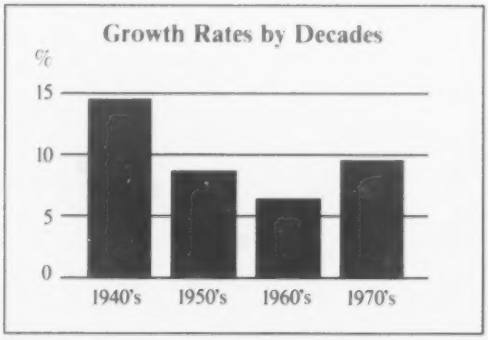






INDUSTRY VALUE OF SHIPMENTS

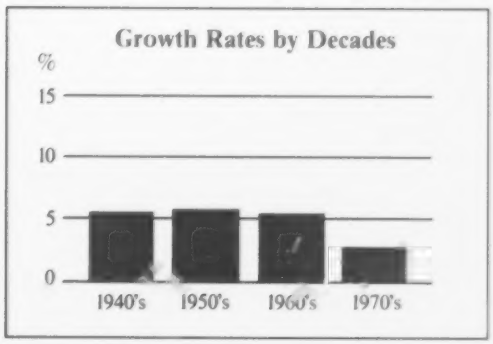


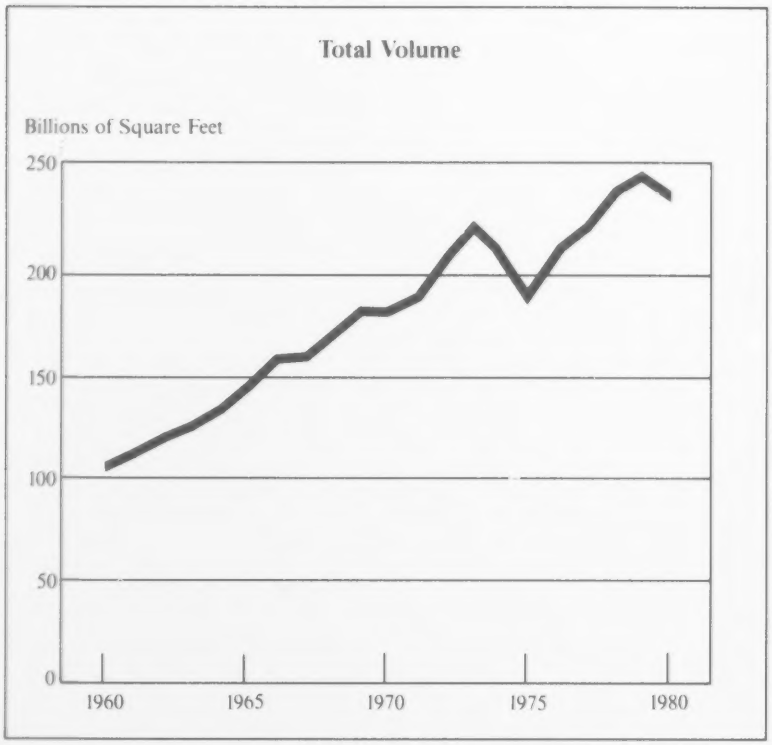


Dollars

YEAR	TOTAL	CORRUGATED	SOLID FIBRE	YEAR TO YEAR GROWTH
1960	$1,791,171,100	$1,746,525,600	$44,645,500	- 0.3%
1961	1,820,090,000	1,777,068,100	43,021,900	+ 1.6
1962	2,000,415,600	1,956,573,300	43,842,300	+ 9.9
1963	2,067,429,400	2,027,179,900	40,249,500	+ 3.3
1964	2,213,855,300	2,175,406,500	38,448,800	+ 7.1
1965	2,406,758,600	2,367,541,900	39,216,700	+ 8.7
1966	2,730,785,600	2,673,737,100	57,048,500	+ 13.5
1967	2,814,803,600	2,761,635,200	53,168,400	+ 3.1
1968	3,043,600,900	2,990,444,200	53,156,700	+ 8.1
1969	3,320,521,800	3,268,934,500	51,587,300	+ 9.1
1970	3,341,044,100	3,298,364,600	42,679,500	+ 0.6
1971	3,463,680,200	3,422,262,100	41,418,100	+ 3.7
1972	3,959,924,500	3,919,862,900	40,061,600	+ 14.3
1973	4,862,056,300	4,815,486,600	46,569,700	+ 22.8
1974	5,792,984,900	5,742,301,300	50,683,600	+ 19.1
1975	5,623,765,200	5,578,612,500	45,152,700	- 2.9
1976	6,443,938,300	6,395,870,800	48,067,500	+ 14.6
1977	6,741,744,100	6,691,170,000	50,574,100	+ 4.6
1978	7,230,097,300	7,204,311,000	55,786,300	+ 7.7
1979	8,407,894,000	8,344,624,600	63,269,400	+ 15.8
1980	9,075,381,800	9,010,411,600	64,970,200	+ 7.9

Definitions are shown on page 32.





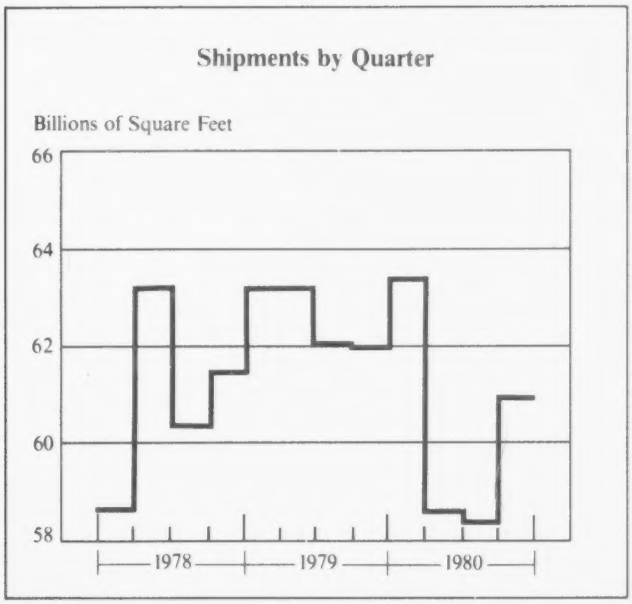
Billions of Square Feet

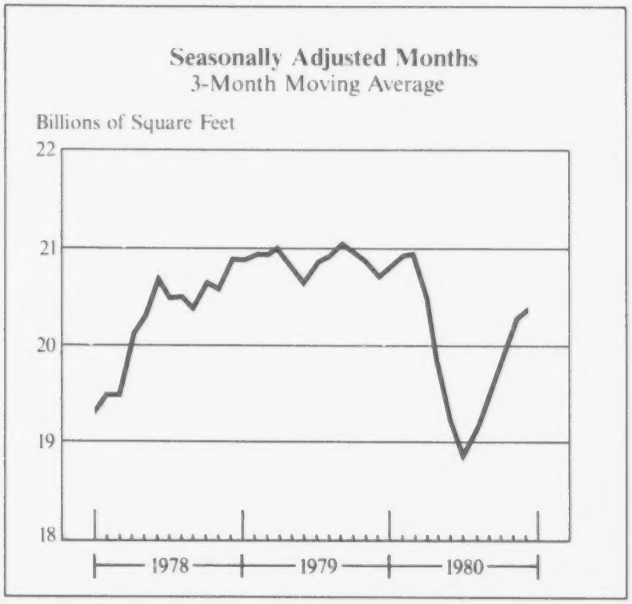
YEAR	TOTAL	CORRUGATED	SOLID FIBRE	YEAR TO YEAR GROWTH
1960	108.931	107.676	1.255	- 1.0%
1961	114.561	113.365	1.196	+ 5.2
1962	122.181	120.994	1.187	+ 6.7
1963	128.663	127.543	1.120	+ 5.3
1964	137.261	136.199	1.062	+ 6.7
1965	148.471	147.393	1.078	+ 8.2
1966	160.452	158.997	1.455	+ 8.1
1967	162.596	161.212	1.384	+ 1.3
1968	173.814	172.361	1.453	+ 6.9
1969	185.652	184.280	1.372	+ 6.8
1970	184.865	183.761	1.104	- 0.4
1971	191.832	190.756	1.076	+ 3.8
1972	211.926	210.880	1.046	+ 10.5
1973	228.052	226.984	1.068	+ 7.6
1974	216.072	215.119	.953	- 5.3
1975	194.329	193.573	.756	- 10.1
1976	216.371	215.565	.806	+ 11.3
1977	227.198	226.360	.838	+ 5.0
1978	243.898	242.999	.899	+ 7.4
1979	250.643	249.701	.942	+ 2.8
1980	241.377	240.490	.887	- 3.7

Definitions are shown on page 32.

INDUSTRY SHIPMENTS

BY MONTH AND QUARTER



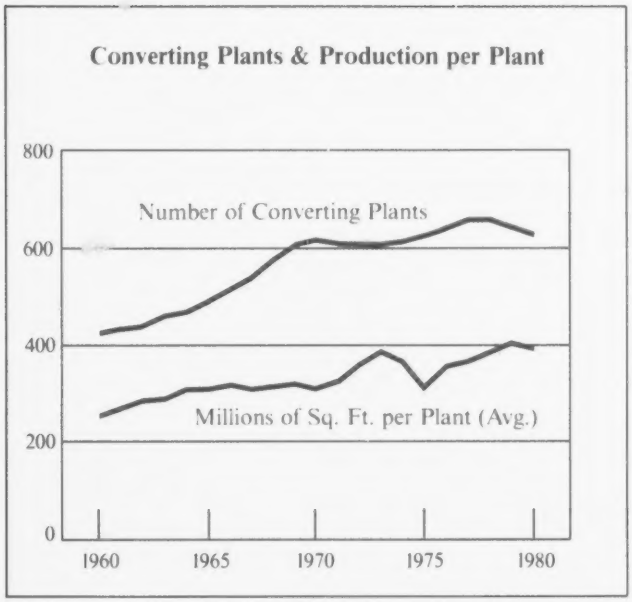


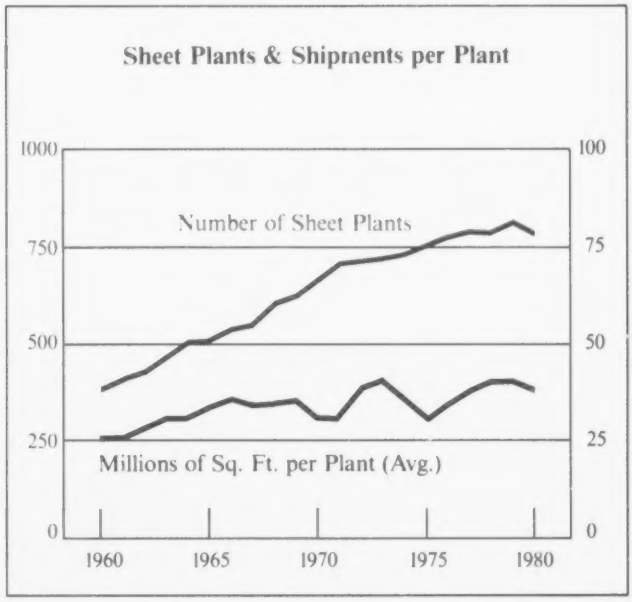
MONTH	1978			1979			1980			Seas. Adjustment
	Avg. Week	Actual	Seas. Adjusted	Avg. Week	Actual	Seas. Adjusted	Avg. Week	Actual	Seas. Adjusted	
January	4.171	18.075	18.626	4.651	20.929	20.794	4.847	21.812	21.373	102.053
February	4.678	18.711	20.094	4.866	19.464	20.884	4.870	20.292	20.650	98.265
March	4.845	21.804	19.758	5.082	22.868	21.235	4.926	21.346	20.972	101.784
1st Quarter	4.565	58.590	58.984	4.866	63.261	63.504	4.881	63.450	63.632	99.714
April	4.676	19.482	20.573	4.940	20.585	21.023	4.744	20.559	19.898	103.323
May	4.838	21.772	20.617	4.827	21.723	20.393	4.240	19.081	18.581	102.689
June	5.091	22.060	20.823	4.837	20.960	20.741	4.538	18.909	19.062	99.199
2nd Quarter	4.870	63.314	61.983	4.867	63.268	61.972	4.504	58.550	57.378	102.043
July	4.062	17.601	19.972	4.540	19.672	21.441	4.075	18.337	19.133	95.838
August	4.956	22.301	20.753	4.915	22.119	20.715	4.433	19.208	19.456	98.727
September	4.738	20.531	20.499	4.878	20.325	21.285	4.817	20.873	20.162	103.524
3rd Quarter	4.590	60.433	60.831	4.778	62.116	62.837	4.437	58.418	59.199	98.681
October	5.217	22.608	20.835	5.236	23.562	20.977	5.118	23.032	20.268	113.640
November	4.697	20.354	20.613	4.691	20.327	20.382	4.480	18.668	20.527	90.942
December	4.292	18.599	21.266	4.179	18.109	20.893	4.280	19.259	20.452	94.167
4th Quarter	4.735	61.561	62.106	4.709	61.998	62.338	4.630	60.959	61.191	99.621
Year	4.690	243.898		4.820	250.643		4.642	241.376		

Definitions are shown on page 32.

INDUSTRY SHIPMENTS

BY TYPE OF PLANT



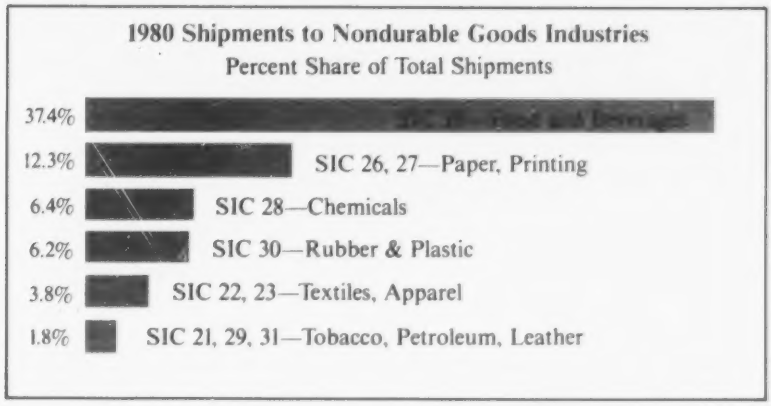


YEAR	TOTAL		CONVERTERS				SHEET PLANTS			
	Billions of Square Feet	Number of Plants	Billions of Square Feet	Percent of Total	Number of Plants	Average Shipments Per Plant	Billion of Square Feet	Percent of Total	Number of Plants	Average Shipments Per Plant
1960	108.931	812	98.991	90.9	428	231	9.940	9.1	384	26
1961	114.561	848	103.875	90.7	433	240	10.686	9.3	415	26
1962	122.181	881	109.309	89.5	443	247	12.872	10.5	438	29
1963	128.663	928	114.345	88.9	459	249	14.318	11.1	469	31
1964	137.261	967	121.531	88.5	463	263	15.730	11.5	504	31
1965	148.471	1,011	130.983	88.2	498	263	17.488	11.8	513	34
1966	160.452	1,065	140.946	87.8	519	272	19.506	12.2	546	36
1967	162.596	1,098	143.200	88.1	548	261	19.396	11.9	550	35
1968	173.814	1,184	152.497	87.7	578	264	21.317	12.3	606	35
1969	185.652	1,236	163.232	87.9	604	270	22.420	12.1	632	36
1970	184.865	1,294	163.230	88.3	623	262	21.635	11.7	671	32
1971	191.832	1,323	168.870	88.0	615	275	22.962	12.0	708	32
1972	211.926	1,324	184.452	87.0	614	300	27.474	13.0	710	39
1973	228.052	1,330	198.646	87.1	607	327	29.406	12.9	723	41
1974	216.072	1,358	189.015	87.5	619	305	27.057	12.5	739	37
1975	194.329	1,385	170.635	87.8	634	269	23.694	12.2	751	32
1976	216.371	1,427	188.694	87.2	645	293	27.677	12.8	782	35
1977	227.198	1,450	197.311	86.8	654	302	29.887	13.2	796	38
1978	243.898	1,449	211.661	86.8	654	324	32.237	13.2	795	41
1979	250.643	1,460	217.105	86.6	649	335	33.538	13.4	811	41
1980	241.377	1,422	210.868	87.4	633	333	30.509	12.6	789	39

Definitions are shown on page 32.

SHIPMENTS

BY END USE INDUSTRY—NONDURABLE GOODS



Percent of Square Footage Shipped by Standard Industrial Classification of Customers

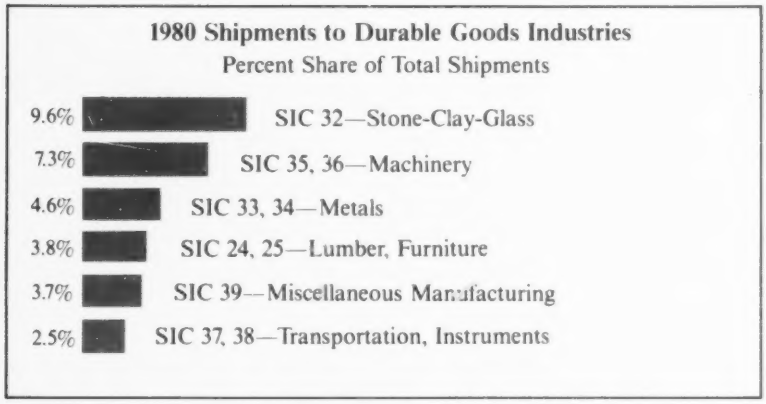
MAJOR GROUP*	MANUFACTURING INDUSTRIES	1978 23 Companies 335 Plants 48.4%	1979 23 Companies 334 Plants 47.5%	1980 23 Companies 329 Plants 47.9%
20	Food and Kindred Products (except 201,202, 203, 205, 207, 208 and Fresh Fruits and Vegetables)	6.6%	7.1%	7.1%
201	Meat Products	7.3	6.7	7.2
202	Dairy Products	2.4	2.4	2.6
203	Canning and Preserving Fruits, Vegetables, and Sea Foods	7.0	6.2	6.3
205	Bakery Products	1.6	1.7	1.7
206	Confectionery and Related Products	1.4	1.5	1.6
208	Beverage Industries	5.6	5.1	5.0
10**	Fresh Fruits and Vegetables	5.7	5.3	5.9
		37.6%	36.0%	37.4%
21	Tobacco Manufactures	.5	.6	.6
22	Textile Mill Products (except 227)	2.5	2.2	2.1
227	Floor Covering Mills	.1	.1	.1
		2.6	2.3	2.2
23	Apparel and Other Finished Products made from Fabrics and Similar Materials	1.7	1.7	1.6
26	Paper and Allied Products	10.5	10.3	10.8
27	Printing, Publishing, and Allied Industries (except 273)	1.3	1.3	1.2
273	Books	.3	.3	.3
		1.6	1.6	1.5
28	Chemicals and Allied Products (except 282, 283, 284, and 285)	1.5	1.6	1.4
282	Plastics Materials and Synthetic Resins, Synthetic Rubber, Synthetic and Other Man-Made Fibers, Except Glass	1.5	1.6	1.3
283	Drugs	.4	.6	.6
284	Soap, Detergents and Cleaning Preparations, Perfumes, Cosmetics and Other Toilet Preparations	2.9	2.5	2.7
285	Paints, Varnishes, Lacquers, Enamels and Allied Products	.7	.5	.4
		7.2	6.8	6.4
29	Petroleum Refining and Related Industries (except 295)	.7	.7	.7
295	Paving and Roofing Materials	.1	.1	.1
		.8	.8	.8
30	Rubber and Miscellaneous Plastics Products (except 307)	1.0	1.1	1.0
307	Miscellaneous Plastics Products	4.4	5.2	5.2
		5.4	6.3	6.2
31	Leather and Leather Products	.5	.5	.4
	Sub-Total, Nondurable Goods	68.4	66.9	67.9

*Standard Industrial Classification. **This number was arbitrarily assigned; not in accordance with Standard Industrial Classification Manual.

The sample as reported here, based on the number of companies indicated in the column headings, will not conform exactly to a complete analysis of sales. The percentages shown should be considered as indicators and not exact proportions. Differences in percentages from year to year can be caused by changes in the list of participating companies. Shipments to sheet plants and jobbers are not included. Companies included on the tabulation operate plants in all 19 Zones of the country.

SHIPMENTS

BY END USE INDUSTRY—DURABLE GOODS



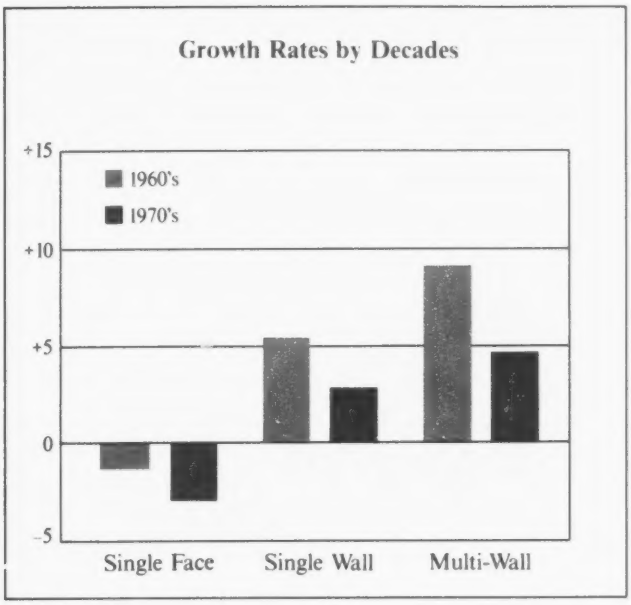
Percent of Square Footage Shipped by Standard Industrial Classification of Customers

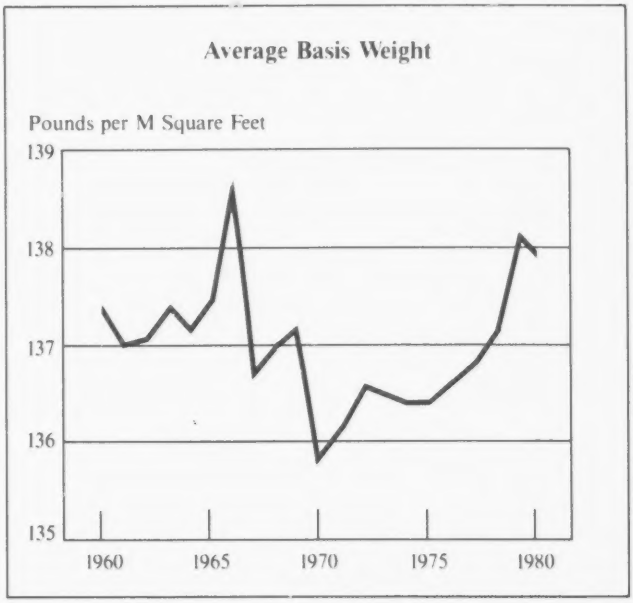
MAJOR GROUP*	MANUFACTURING INDUSTRIES	1978 23 Companies 335 Plants 48.4%	1979 23 Companies 334 Plants 47.5%	1980 23 Companies 329 Plants 47.9%
24	Lumber and Wood Products, Except Furniture	1.0%	1.0%	.9%
25	Furniture and Fixtures (except 251)	1.4%	1.3%	1.2%
251	Household Furniture	1.7 — 3.1	1.9 — 3.2	1.6 — 2.8
32	Stone, Clay, and Glass Products (except 322, 326, and 329)	.9	.9	.8
322	Glass and Glassware, Pressed or Blown	6.3	7.0	8.1
326	Pottery and Related Products	.3	.3	.3
329	Abrasive, Asbestos, and Misc. Nonmetallic Mineral Products	.4 — 7.9	.4 — 8.6	.6 — 9.6
33	Primary Metal Industries	.7	.8	.7
34	Fabricated Metal Products, Except Ordnance, Machinery and Transportation Equipment (except 341)	3.3	3.6	2.8
341	Metal Cans	.4 — 3.7	.3 — 3.9	.3 — 3.1
35	Machinery, Except Electrical (except 358)	1.9	2.0	2.1
358	Service Industry Machines	.4 — 2.3	.4 — 2.4	.4 — 2.5
36	Electrical Machinery, Equipment and Supplies (except 363, 364, 365 and 366-367)	1.1	1.1	1.0
363	Household Appliances	2.4	2.1	2.1
364	Electric Lighting and Wiring Equipment	.9	.9	.8
365	Radio and TV Receiving Sets, Except Communication Types	.4	.4	.4
366-367	Communication Equipment and Electronic Components and Accessories	.5 — 5.3	.5 — 5.0	.5 — 4.8
37	Transportation Equipment (except 371)	.3	.3	.2
371	Motor Vehicles and Motor Vehicle Equipment	1.8 — 2.1	1.8 — 2.1	1.5 — 1.7
38	Professional, Scientific, and Controlling Instruments; Photographic and Optical Goods; Watches and Clocks	.8	.8	.8
39	Miscellaneous Manufacturing Industries (except 394)	2.7	3.4	3.5
394	Toys, Amusement, Sporting and Athletic Goods	1.5 — 4.2	1.3 — 4.7	1.1 — 4.6
	Sub-Total, Durable Goods	31.1	32.5	31.5
	Sub-Total, Nondurable Goods	68.4	66.9	67.9
42	Motor Freight Transportation and Warehousing	.3	.3	.3
90	Government	.2	.3	.3
	TOTAL	100.0%	100.0%	100.0%

*Standard Industrial Classification.

INDUSTRY CORRUGATOR PRODUCTION

BY TYPE OF BOARD





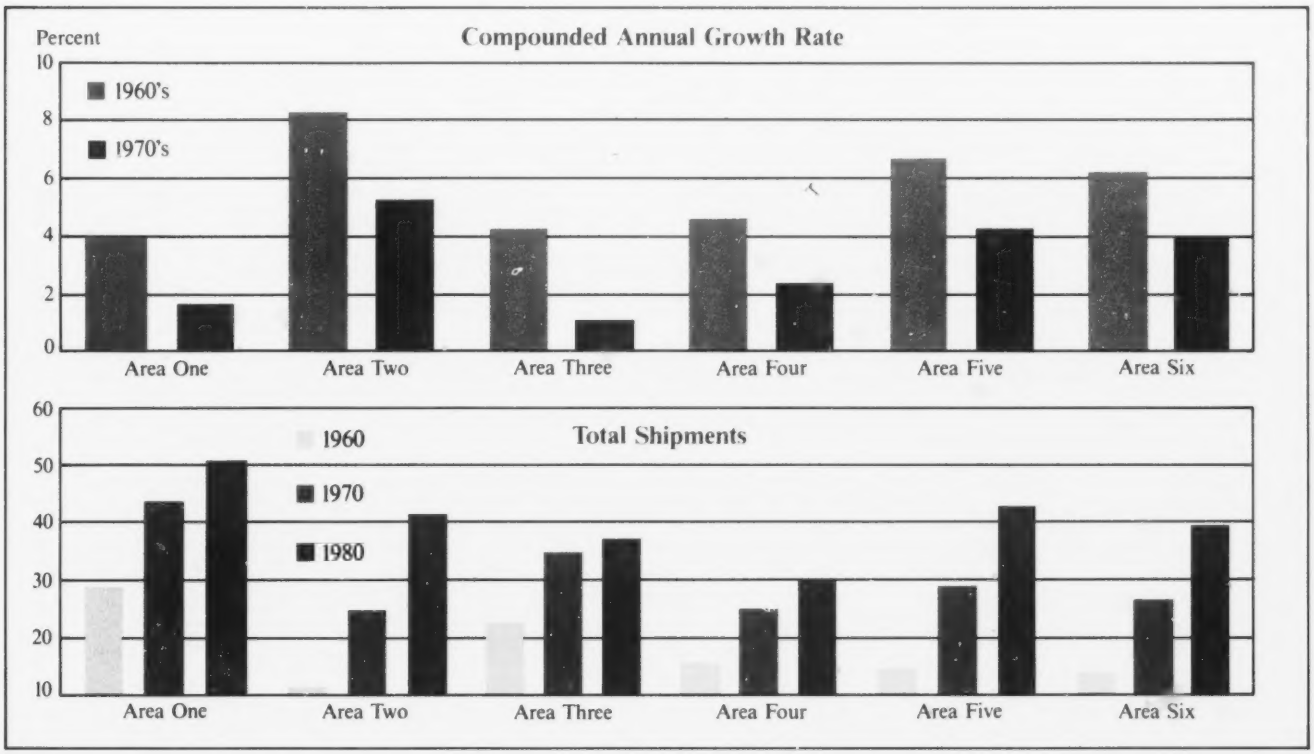
Billions of Square Feet

YEAR	Single Face	% Of Total	Single Wall	% Of Total	Double & Triple Wall	% Of Total	Total
1960	1.648	1.5%	104.206	93.1%	6.063	5.4%	111.917
1961	1.486	1.3	110.095	93.1	6.607	5.6	118.188
1962	1.416	1.1	116.879	92.9	7.503	6.0	125.798
1963	1.453	1.1	123.037	92.6	8.372	6.3	132.862
1964	1.390	1.0	131.868	92.5	9.224	6.5	142.482
1965	1.400	0.9	141.941	92.4	10.231	6.7	153.572
1966	1.594	1.0	151.593	91.7	12.025	7.3	165.212
1967	1.569	0.9	154.918	92.1	11.807	7.0	168.294
1968	1.549	0.9	165.937	91.8	13.278	7.3	180.764
1969	1.592	0.8	177.426	91.7	14.571	7.5	193.589
1970	1.548	0.8	177.087	91.9	14.105	7.3	192.740
1971	1.461	0.7	183.775	91.7	15.119	7.6	200.355
1972	1.567	0.7	200.902	91.3	17.641	8.0	220.110
1973	1.490	0.6	216.841	90.9	20.196	8.5	238.527
1974	1.492	0.7	203.449	90.8	19.154	8.5	224.095
1975	1.166	0.6	186.172	91.6	15.892	7.8	203.230
1976	1.305	0.6	207.880	91.2	18.633	8.2	227.818
1977	1.216	0.5	217.184	91.0	20.401	8.5	238.801
1978	1.265	0.5	232.827	90.8	22.309	8.7	256.401
1979	1.166	0.4	236.670	90.7	23.236	8.9	261.072
1980	1.144	0.5	229.054	90.9	21.741	8.6	251.939

Definitions are shown on page 32.

INDUSTRY SHIPMENTS

BY AREA



Millions of Square Feet

YEAR	AREA 1		AREA 2		AREA 3		AREA 4		AREA 5		AREA 6	
	Total	% of Industry	Total	% of Industry	Total	% of Industry	Total	% of Industry	Total	% of Industry	Total	% of Industry
1960	29,704	27.3%	11,044	10.1%	23,317	21.4%	15,749	14.5%	14,946	13.7%	14,172	13.0%
1961	30,574	26.7	12,083	10.6	23,759	20.7	16,539	14.4	16,194	14.1	15,412	13.5
1962	32,129	26.3	13,225	10.8	25,170	20.6	18,071	14.8	17,109	14.0	16,478	13.5
1963	33,723	26.2	14,209	11.0	26,562	20.6	18,730	14.6	17,955	14.0	17,484	13.6
1964	35,310	25.7	15,545	11.3	28,385	20.7	20,263	14.8	19,155	14.0	18,604	13.5
1965	37,710	25.4	17,419	11.7	30,938	20.9	21,843	14.7	20,663	13.9	19,898	13.4
1966	39,777	24.8	19,314	12.0	32,882	20.5	22,862	14.3	23,031	14.3	22,586	14.1
1967	39,989	24.6	20,483	12.6	32,363	19.9	22,703	13.9	24,223	14.9	22,875	14.1
1968	42,162	24.3	22,278	12.8	34,430	19.8	24,016	13.8	26,347	15.2	24,581	14.1
1969	44,378	23.9	24,707	13.3	36,320	19.5	25,186	13.6	28,358	15.3	26,703	14.4
1970	44,038	23.8	25,040	13.6	35,194	19.0	24,820	13.4	28,998	15.7	26,774	14.5
1971	44,813	23.4	27,163	14.2	36,374	18.9	25,877	13.5	30,248	15.8	27,356	14.2
1972	48,382	22.8	30,957	14.6	40,248	19.0	28,513	13.5	33,788	15.9	30,038	14.2
1973	51,019	22.4	33,561	14.7	42,689	18.7	30,760	13.5	37,083	16.3	32,941	14.4
1974	48,537	22.5	31,599	14.6	39,146	18.1	28,944	13.4	35,099	16.2	32,747	15.2
1975	42,183	21.7	29,403	15.1	34,134	17.6	25,541	13.2	32,092	16.5	30,976	15.9
1976	46,697	21.6	32,809	15.2	38,326	17.7	28,471	13.2	36,220	16.7	33,848	15.6
1977	48,301	21.3	35,187	15.5	39,845	17.5	29,611	13.0	38,646	17.0	35,609	15.7
1978	52,275	21.4	38,796	15.9	41,433	17.0	31,368	12.9	41,753	17.1	38,273	15.7
1979	53,322	21.3	41,586	16.6	41,071	16.4	31,819	12.7	43,175	17.2	39,670	15.8
1980	50,551	20.9	41,284	17.1	36,912	15.3	30,147	12.5	42,867	17.8	39,616	16.4

Definitions are shown on page 32.

AREA SHIPMENTS

BY MONTH
Millions of Square Feet

MONTH	AREA ONE			AREA TWO			AREA THREE		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
January	3,786.0	4,491.6	4,537.3	3,063.9	3,595.9	3,795.5	2,934.1	3,586.0	3,424.5
February	3,829.3	4,040.4	4,247.5	3,060.3	3,345.2	3,587.0	3,381.4	3,303.9	3,225.8
March	4,803.3	4,939.0	4,452.9	3,443.6	3,773.5	3,730.0	3,754.1	3,978.3	3,376.7
April	4,253.2	4,354.7	4,268.1	3,042.2	3,427.4	3,532.7	3,392.9	3,354.9	3,102.1
May	4,661.1	4,630.6	4,061.2	3,473.9	3,674.5	3,312.5	3,758.1	3,604.5	2,852.9
June	4,794.9	4,537.7	4,147.7	3,457.8	3,419.4	3,189.8	3,763.5	3,425.3	2,764.2
July	3,562.1	4,023.9	3,742.8	2,695.3	3,184.4	3,047.5	2,908.1	3,124.6	2,586.6
August	4,816.3	4,783.8	4,060.4	3,447.3	3,562.6	3,196.5	3,811.8	3,506.3	2,896.8
September	4,480.1	4,360.7	4,454.9	3,174.7	3,283.5	3,371.6	3,488.7	3,303.9	3,249.3
October	4,938.6	4,933.9	4,799.1	3,488.2	3,703.5	3,796.5	3,790.7	3,818.8	3,564.1
November	4,366.0	4,395.8	3,869.3	3,332.8	3,389.9	3,212.1	3,417.1	3,271.0	2,927.8
December	3,883.6	3,813.9	3,910.1	3,121.4	3,226.2	3,512.5	3,032.0	2,793.5	2,940.8
TOTAL	52,373.4	53,322.1	50,551.3	38,795.5	41,586.0	41,284.2	41,432.6	41,071.0	36,911.7

BY AVERAGE WEEK
Millions of Square Feet

MONTH	AREA ONE			AREA TWO			AREA THREE		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
January	873.7	998.1	1,008.3	707.1	799.1	843.4	677.1	796.9	761.0
February	957.3	1,010.1	1,019.4	765.1	836.3	860.9	845.4	826.0	774.2
March	1,067.4	1,096.7	1,027.6	765.2	838.5	860.8	834.3	884.1	779.2
April	1,020.8	1,045.1	984.9	730.1	822.6	815.2	814.3	805.2	715.9
May	1,035.8	1,029.0	902.5	772.0	816.6	736.1	835.1	801.0	634.0
June	1,106.5	1,051.8	995.5	796.6	789.1	765.6	868.5	790.5	663.4
July	822.0	928.6	831.7	622.0	734.9	677.2	671.1	721.1	574.8
August	1,070.3	1,063.1	937.0	766.1	791.7	737.6	847.1	779.2	648.5
September	1,033.9	1,046.6	1,028.3	732.6	788.1	778.1	805.1	792.9	749.8
October	1,139.9	1,096.4	1,066.5	805.0	823.0	843.7	874.8	848.6	792.0
November	1,007.5	1,014.4	928.6	769.1	782.3	770.9	788.6	754.9	702.7
December	919.3	880.1	868.9	720.3	744.5	780.6	699.7	644.6	653.5
Average	1,005.3	1,025.4	972.1	746.1	799.7	793.9	796.8	789.8	709.8

Definitions are shown on page 32.

AREA SHIPMENTS

Volume

AREA FOUR			AREA FIVE			AREA SIX			
1978	1979	1980	1978	1979	1980	1978	1979	1980	MONTH
2,341.7	2,531.6	2,805.9	3,160.6	3,610.1	3,848.6	2,788.2	3,113.3	3,400.2	January
2,479.9	2,498.2	2,561.7	3,258.0	3,364.4	3,652.5	2,702.1	2,911.6	3,017.6	February
2,801.5	2,952.2	2,644.8	3,702.4	3,871.1	3,777.8	3,299.3	3,358.2	3,363.3	March
2,511.0	2,596.4	2,512.4	3,359.3	3,464.5	3,617.9	2,923.6	3,387.3	3,525.9	April
2,750.2	2,744.9	2,308.4	3,673.2	3,733.1	3,334.1	3,455.1	3,335.4	3,212.2	May
2,781.7	2,859.5	2,269.3	3,689.7	3,539.3	3,342.8	3,578.4	3,359.2	3,196.0	June
2,257.3	2,511.0	2,289.7	3,067.8	3,426.8	3,235.6	3,110.0	3,401.2	3,434.4	July
2,878.4	2,874.3	2,406.9	3,782.6	3,837.3	3,389.4	3,565.0	3,554.7	3,258.4	August
2,619.6	2,628.2	2,664.8	3,486.6	3,497.4	3,699.2	3,281.5	3,251.8	3,433.4	September
2,941.2	3,018.2	2,969.6	3,815.1	4,146.6	4,050.4	3,632.6	3,940.8	3,851.5	October
2,632.5	2,564.2	2,352.9	3,534.4	3,524.7	3,358.1	3,071.1	3,181.3	2,948.3	November
2,372.8	2,240.4	2,360.2	3,223.8	3,159.5	3,560.9	2,865.9	2,875.5	2,974.0	December
31,367.8	31,818.9	30,146.6	41,753.7	43,174.9	42,867.0	38,272.7	39,670.2	39,615.6	TOTAL

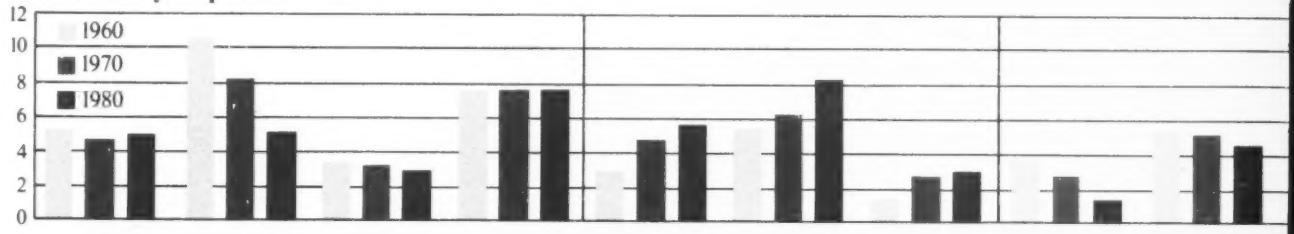
AREA FOUR			AREA FIVE			AREA SIX			
1978	1979	1980	1978	1979	1980	1978	1979	1980	MONTH
540.4	562.6	623.5	729.4	802.2	855.2	643.4	691.9	755.6	January
620.0	624.5	614.8	814.5	841.1	876.6	675.5	727.9	724.2	February
622.6	656.0	610.3	822.7	860.2	871.8	733.2	746.3	776.2	March
602.6	623.1	579.8	806.2	831.5	834.9	701.7	813.0	813.7	April
611.1	610.0	513.0	816.3	829.6	740.9	767.8	741.2	713.8	May
641.9	613.7	544.6	851.5	816.9	802.2	825.8	775.2	767.0	June
520.9	579.5	508.8	708.0	790.8	719.0	717.7	784.9	763.2	July
639.6	638.7	555.4	840.6	852.7	782.2	792.2	789.9	751.9	August
604.5	630.8	614.9	804.6	839.4	853.7	757.3	780.4	782.3	September
678.7	670.7	659.9	880.4	921.5	900.1	838.3	875.7	856.0	October
607.5	591.7	568.7	815.6	813.4	805.9	708.7	734.1	707.6	November
547.6	517.0	524.5	744.0	729.1	791.3	661.4	663.6	660.9	December
603.2	611.9	579.7	803.0	830.3	824.4	736.0	762.9	761.8	TOTAL

Definitions are shown on page 32.

ZONE SHIPMENTS

YEAR	AREA 1				AREA 2			AREA 3	
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 10	ZONE 11	ZONE 19	ZONE 5	ZONE 6

Percent of Total Industry Shipments



TOTAL*
Millions of Square Feet

1960	5,750	11,413	3,983	8,558	3,223	6,066	1,755	4,279	5,996
1961	5,984	11,760	4,019	8,811	3,538	6,622	1,923	4,311	5,990
1962	6,478	12,246	4,350	9,055	4,021	7,214	1,990	4,324	6,474
1963	6,651	12,704	4,507	9,861	4,542	7,716	1,951	4,545	6,840
1964	6,884	13,194	4,880	10,352	5,025	8,426	2,094	4,779	7,375
1965	7,528	13,687	5,077	11,418	5,655	9,140	2,624	4,903	8,194
1966	7,931	14,168	5,336	12,342	6,152	9,795	3,367	4,850	8,859
1967	7,788	14,278	5,381	12,502	6,317	10,334	3,832	4,860	8,635
1968	8,235	14,934	5,666	13,327	7,384	10,679	4,215	5,029	9,344
1969	8,599	15,483	6,072	14,224	8,396	11,388	4,923	5,311	9,964
1970	8,489	15,176	5,998	14,375	8,630	11,395	5,015	5,167	9,572
1971	9,027	15,106	6,147	14,533	9,443	12,450	5,270	5,075	9,860
1972	10,107	15,180	6,723	16,372	10,650	14,509	5,798	5,282	10,854
1973	10,658	15,879	7,088	17,394	11,628	16,044	5,889	5,413	12,009
1974	10,087	14,936	6,819	16,695	11,073	14,990	5,536	5,081	10,787
1975	8,879	12,895	5,885	14,524	10,187	13,674	5,542	4,491	9,199
1976	10,192	13,880	6,545	16,080	11,019	15,985	5,805	4,664	10,720
1977	10,965	13,870	6,654	16,812	11,765	17,506	5,916	4,464	11,539
1978	11,789	14,885	7,439	18,162	12,919	19,030	6,847	4,518	11,884
1979	12,715	13,825	7,703	19,079	13,766	20,245	7,575	4,318	11,858
1980	11,919	12,514	7,302	18,816	13,945	19,823	7,516	3,815	10,935

CORRUGATED
Millions of Square Feet

1960	5,692	11,396	3,983	8,386	3,223	6,038	1,724	4,277	5,984
1961	5,926	11,741	4,018	8,633	3,538	6,583	1,888	4,310	5,980
1962	6,425	12,217	4,350	8,913	4,021	7,179	1,958	4,322	6,463
1963	6,608	12,680	4,507	9,700	4,534	7,684	1,898	4,540	6,832
1964	6,837	13,174	4,880	10,192	5,017	8,405	2,084	4,776	7,369
1965	7,478	13,677	5,077	11,258	5,648	9,114	2,611	4,897	8,188
1966	7,882	14,161	5,336	12,140	6,120	9,714	3,357	4,840	8,855
1967	7,742	14,262	5,381	12,330	6,240	10,266	3,820	4,848	8,631
1968	8,192	14,920	5,665	13,119	7,308	10,653	4,204	5,016	9,339
1969	8,558	15,472	6,072	14,038	8,307	11,336	4,912	5,301	9,961
1970	8,461	15,169	5,998	14,217	8,535	11,348	5,004	5,159	9,570
1971	9,006	15,092	6,147	14,398	9,346	12,406	5,257	5,068	9,857
1972	10,101	15,172	6,723	16,232	10,554	14,450	5,784	5,275	10,852
1973	10,658	15,876	7,088	17,257	11,498	15,981	5,889	5,403	12,007
1974	10,086	14,934	6,819	16,560	10,949	14,912	5,535	5,072	10,786
1975	8,878	12,894	5,885	14,386	10,122	13,632	5,542	4,484	9,199
1976	10,192	13,878	6,545	15,969	10,934	15,909	5,805	4,658	10,720
1977	10,963	13,869	6,654	16,696	11,671	17,437	5,916	4,461	11,539
1978	11,785	14,884	7,439	18,033	12,816	18,974	6,847	4,515	11,884
1979	12,713	13,823	7,694	18,962	13,633	20,182	7,575	4,314	11,857
1980	11,918	12,505	7,294	18,714	13,826	19,778	7,516	3,811	10,935

*Total includes corrugated and solid fibre.

Definitions are shown on page 32.

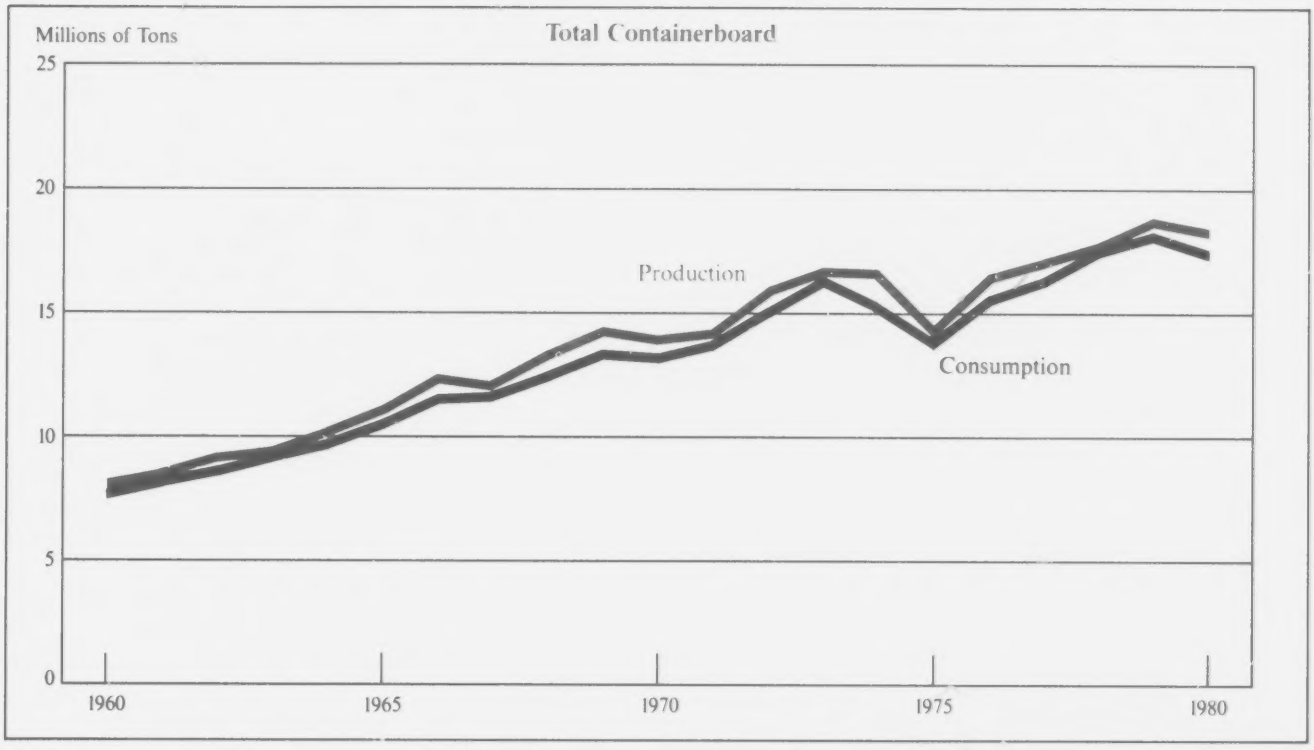
ZONE SHIPMENTS

		AREA 4		AREA 5			AREA 6		
ZONE 7	ZONE 8	ZONE 9	ZONE 13	ZONE 12	ZONE 15	ZONE 16	ZONE 14	ZONE 17	ZONE 18
8,467	4,575	9,410	6,338	7,843	3,641	3,462	5,514	5,937	2,721
8,877	4,581	9,881	6,658	8,072	4,076	4,046	5,977	6,651	2,784
9,452	4,920	10,897	7,174	8,458	4,307	4,344	6,303	7,112	3,063
9,691	5,486	11,118	7,612	8,751	4,568	4,636	6,349	7,694	3,441
10,315	5,916	12,215	8,048	9,400	4,888	4,867	6,642	8,401	3,561
11,144	6,657	13,177	8,665	9,983	5,435	5,245	6,901	9,033	3,964
12,036	7,137	13,557	9,305	11,039	6,086	5,906	7,852	10,164	4,570
11,740	7,128	13,113	9,590	11,358	6,421	6,444	7,760	10,402	4,713
12,285	7,772	14,126	9,890	12,316	7,087	6,944	8,386	11,288	4,907
12,917	8,128	14,735	10,451	13,167	7,764	7,427	8,782	12,618	5,303
12,613	7,842	14,485	10,335	13,422	7,975	7,601	8,984	12,366	5,424
12,917	8,522	15,161	10,716	13,678	8,250	8,320	9,091	12,669	5,596
14,554	9,558	16,481	12,032	15,135	9,224	9,429	9,664	14,484	5,890
15,247	10,020	17,822	12,938	16,993	10,033	10,057	10,461	15,829	6,651
14,705	8,574	16,369	12,574	16,281	9,822	8,996	10,613	15,377	6,757
12,708	7,736	14,253	11,288	14,636	9,257	8,199	10,239	14,334	6,403
14,213	8,729	15,894	12,577	16,208	10,743	9,269	11,260	15,478	7,110
14,860	8,982	16,180	13,431	16,637	11,904	10,055	11,571	16,496	7,542
15,453	9,578	17,037	14,332	18,335	12,674	10,744	12,674	17,735	7,864
15,551	9,344	16,906	14,912	18,555	13,316	11,304	12,826	18,444	8,400
14,269	7,893	15,703	14,444	18,007	13,418	11,442	12,800	18,280	8,536
8,417	4,375	9,257	6,092	7,805	3,609	3,326	5,464	5,925	2,703
8,841	4,380	9,735	6,449	8,047	4,044	3,919	5,930	6,638	2,765
9,425	4,710	10,773	6,951	8,441	4,275	4,212	6,222	7,100	3,038
9,674	5,289	10,997	7,410	8,740	4,537	4,509	6,297	7,686	3,421
10,299	5,727	12,095	7,818	9,390	4,858	4,746	6,598	8,394	3,541
11,171	6,489	13,042	8,441	9,963	5,402	5,120	6,848	9,023	3,945
11,991	6,972	13,440	9,066	11,020	6,039	5,725	7,738	10,146	4,455
11,711	6,980	13,007	9,380	11,339	6,376	6,264	7,639	10,374	4,622
12,252	7,632	14,013	9,691	12,297	7,029	6,758	8,254	11,215	4,804
12,885	7,958	14,615	10,266	13,145	7,711	7,276	8,689	12,573	5,205
12,601	7,704	14,395	10,170	13,402	7,928	7,479	8,930	12,328	5,362
12,911	8,365	15,064	10,576	13,657	8,207	8,197	9,041	12,623	5,539
14,550	9,406	16,385	11,882	15,119	9,177	9,277	9,651	14,445	5,845
15,243	9,857	17,724	12,793	16,982	9,883	9,907	10,451	15,791	6,598
14,702	8,467	16,281	12,439	16,272	9,780	8,869	10,607	15,348	6,701
12,706	7,634	14,169	11,192	14,632	9,221	8,087	10,237	14,318	6,356
14,212	8,628	15,825	12,456	16,203	10,708	9,152	11,256	15,461	7,059
14,850	8,895	16,115	13,304	16,682	11,858	9,912	11,563	16,477	7,489
15,452	9,480	16,958	14,189	18,331	12,626	10,592	12,647	17,712	7,816
15,550	9,231	16,823	14,766	18,550	13,269	11,172	12,821	18,427	8,339
14,269	7,793	15,610	14,330	18,002	13,360	11,315	12,791	18,264	8,459

Definitions are shown on page 32.

CONTAINERBOARD PRODUCTION

FOR DOMESTIC USE, BY TYPE



Thousands of Tons

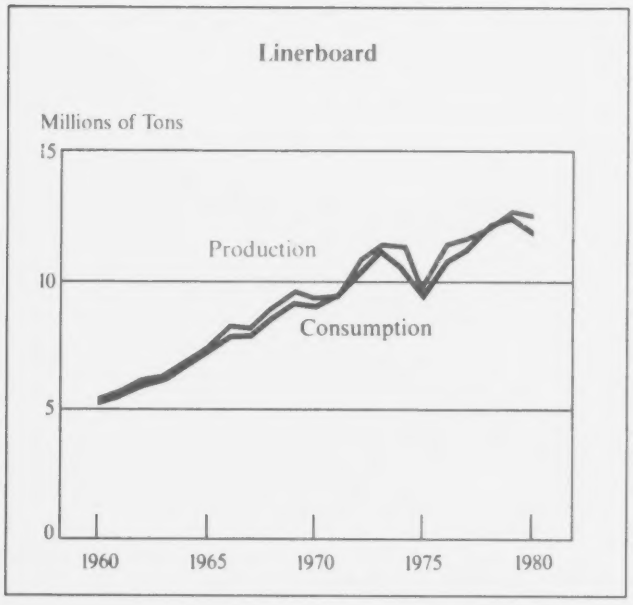
YEAR	TOTAL	LINERBOARD			CORRUGATING MATERIALS			Total Chip & Filler Boards
		Kraft	Recycled	Total	Semichemical & Kraft	Recycled	Total	
1960	8,186.6	4,731.2	743.6	5,474.8	1,788.9	672.1	2,461.0	250.8
1961	8,661.3	5,095.7	658.2	5,753.9	2,023.5	625.8	2,649.3	258.1
1962	9,299.0	5,514.7	701.8	6,216.5	2,188.8	633.3	2,822.1	260.4
1963	9,638.3	5,706.1	707.9	6,414.0	2,287.1	674.7	2,961.8	262.5
1964	10,341.9	6,188.0	719.5	6,907.5	2,447.4	717.7	3,165.1	269.3
1965	11,199.1	6,698.1	782.5	7,480.6	2,638.2	800.0	3,438.2	280.3
1966	12,459.6	7,550.2	797.1	8,347.3	2,909.8	890.0	3,799.8	312.5
1967	12,248.6	7,693.3	522.3	8,215.6	2,982.1	761.4	3,743.5	289.5
1968	13,388.4	8,612.2	431.5	9,043.7	3,371.2	690.7	4,061.9	282.8
1969	14,396.4	9,345.3	347.1	9,692.4	3,617.0	778.4	4,395.4	308.6
1970	13,964.3	9,133.4	269.7	9,403.1	3,404.7	859.3	4,264.0	297.2
1971	14,353.0	9,249.1	281.7	9,530.8	3,580.2	939.5	4,519.7	302.5
1972	16,019.0	10,577.6	278.9	10,856.5	3,874.2	972.3	4,846.5	315.9
1973	16,928.1	11,066.9	289.1	11,355.9	4,126.5	1,128.5	5,255.0	317.1
1974	16,767.0	10,838.4	467.1	11,305.4	4,010.3	1,169.0	5,179.2	282.3
1975	14,585.2	9,646.9	207.3	9,854.2	3,579.4	870.0	4,449.3	282.6
1976	16,700.2	11,093.?	282.7	11,375.9	3,986.5	1,075.1	5,061.5	262.9
1977	17,167.3	11,354.4	341.3	11,695.7	4,128.2	1,079.7	5,207.9	263.7
1978	17,908.2	11,877.2	256.4	12,133.7	4,305.3	1,197.7	5,503.1	271.5
1979	18,824.8	12,417.3	402.3	12,819.6	4,573.6	1,202.3	5,775.9	229.3
1980*	18,485.1	12,252.4	473.8	12,726.2	4,489.9	1,080.9	5,530.8	228.1

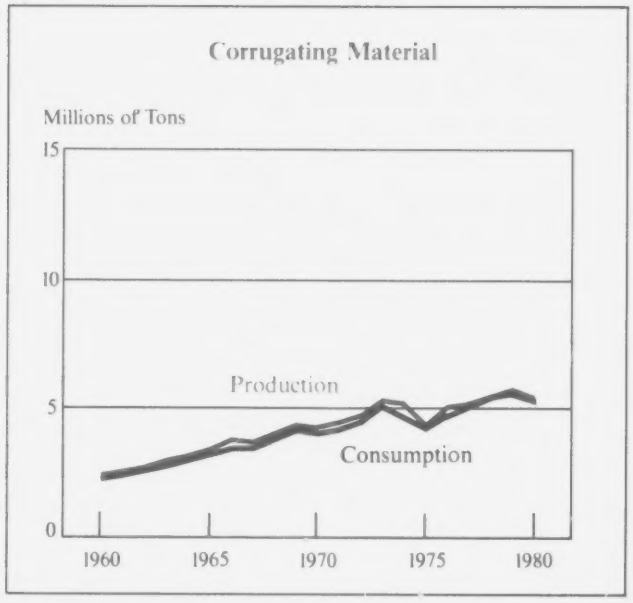
Definitions are shown on page 32.

Source: Paperboard Group, American Paper Institute, Inc.

CONTAINERBOARD CONSUMPTION

BY BOX PLANTS, BY TYPE





Thousands of Tons

YEAR	TOTAL	LINERBOARD	CORRUGATING MATERIALS	FILLER BOARD
1960	7,901.3	5,361.6	2,422.2	117.5
1961	8,293.9	5,634.1	2,547.8	112.0
1962	8,820.4	6,000.0	2,716.5	103.9
1963	9,300.7	6,327.4	2,881.9	91.4
1964	9,949.1	6,763.9	3,091.8	93.4
1965	10,735.7	7,315.8	3,327.5	92.4
1966	11,707.9	7,996.5	3,592.1	119.3
1967	11,752.0	8,022.3	3,626.7	103.0
1968	12,616.8	8,625.9	3,885.9	105.0
1969	13,487.2	9,229.2	4,166.3	91.7
1970	13,267.5	9,079.0	4,107.1	81.4
1971	13,806.8	9,465.2	4,273.4	68.2
1972	15,189.4	10,428.8	4,697.7	62.9
1973	16,446.4	11,315.1	5,059.7	71.6
1974	15,428.8	10,621.2	4,746.2	61.4
1975	13,975.4	9,609.1	4,320.2	46.1
1976	15,677.1	10,782.0	4,844.4	50.7
1977	16,464.1	11,318.3	5,102.5	43.3
1978	17,708.7	12,168.4	5,494.7	45.6
1979	18,159.7	12,456.0	5,654.5	49.2
1980	17,489.5	12,018.5	5,427.4	43.6

Definitions are shown on page 32.

NOTE: The apparent disparity between containerboard production, consumption and inventories is attributable to two factors: (1) about 4% of production is diverted to other uses such as tube stock, composite cans, drums; (2) production includes container chip which is not consumed by container plants except as filler board consumed on solid fibre pasters.

CONTAINERBOARD INVENTORY

AT BOX PLANTS AND MILL SITES

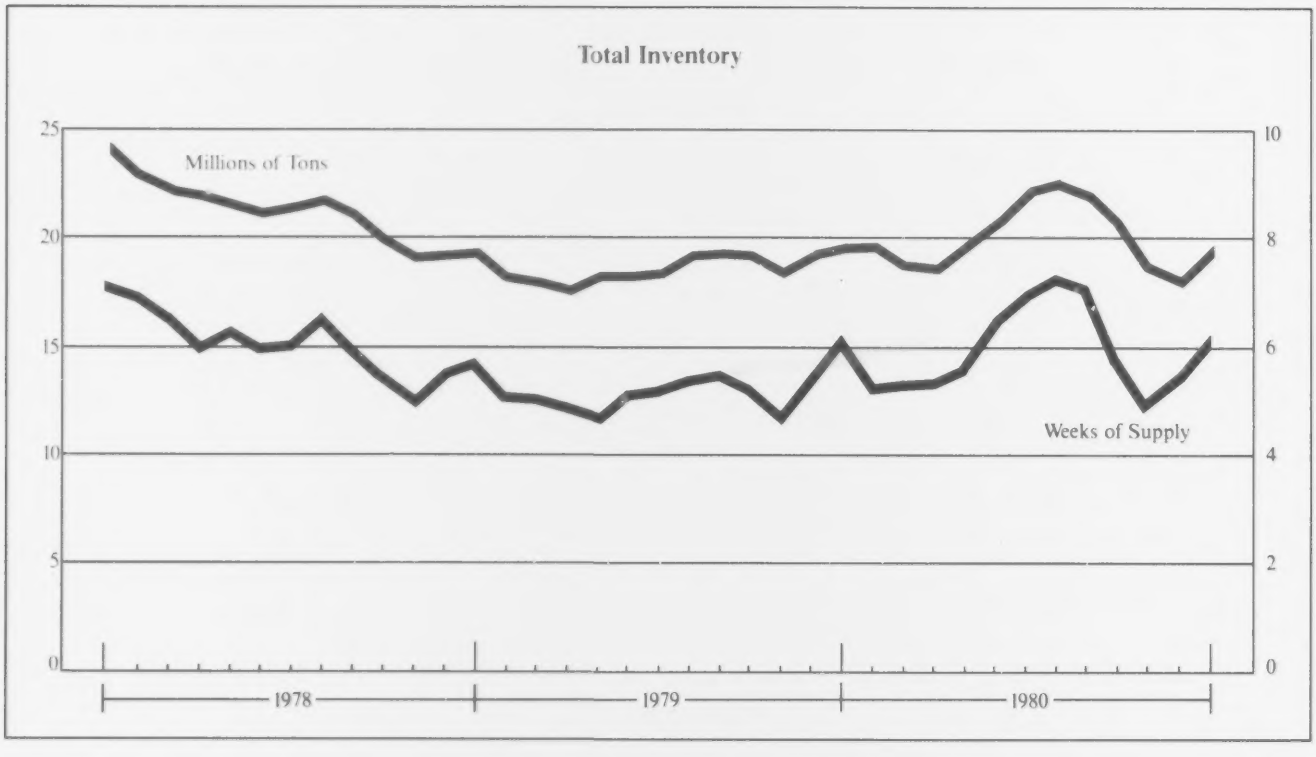
Tonnage and Weeks of Supply

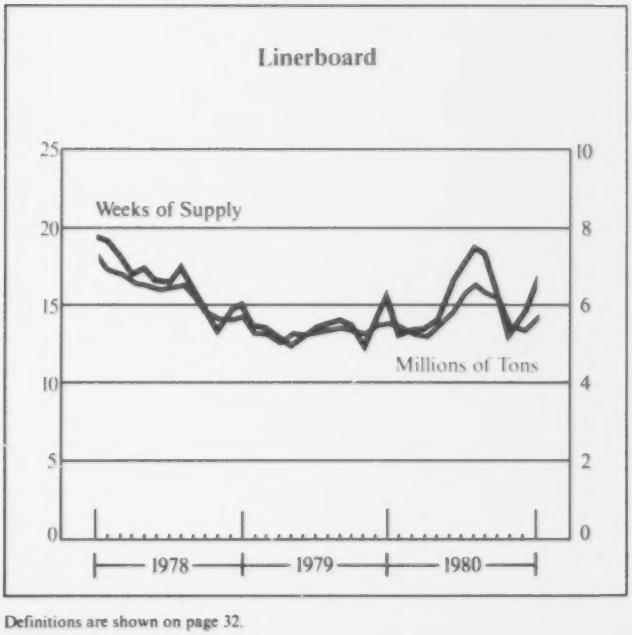
Millions of Tons	Jan 1	Feb 1	Mar 1	Apr 1	May 1	Jun 1	Jul 1	Aug 1	Sep 1	Oct 1	Nov 1	Dec 1	Jan 1
	1978												1979
Linerboard:													
Box Plants	1,560.8	1,428.1	1,381.5	1,386.0	1,406.8	1,407.4	1,430.2	1,471.9	1,423.9	1,329.3	1,300.7	1,298.3	1,355.6
Mills	272.1	299.7	311.9	273.6	232.3	205.7	184.5	150.4	142.6	142.6	110.4	110.0	73.3
Total	1,832.9	1,727.8	1,693.4	1,659.6	1,639.1	1,613.1	1,614.7	1,622.3	1,566.5	1,471.9	1,411.1	1,408.3	1,428.9
Wks.of Supply	7.8	7.7	7.3	6.7	7.0	6.6	6.6	7.1	6.4	5.9	5.4	5.9	6.1
Corr. Mat'ls:													
Box Plants	533.5	489.9	476.2	485.4	482.3	490.3	509.3	542.6	516.8	485.3	475.6	494.9	497.8
Mills	57.9	64.4	58.3	53.8	46.8	40.2	33.6	24.1	22.9	24.2	25.0	24.9	24.9
Total	591.4	554.3	534.5	539.2	529.1	530.5	542.9	566.7	539.7	509.5	500.6	519.8	522.7
Wks.of Supply	5.6	5.4	5.1	4.9	5.0	4.8	4.9	5.5	4.9	4.5	4.2	4.8	4.9
Filler Board:	5.3	6.5	7.0	6.0	6.8	7.0	7.8	7.5	8.9	7.7	7.7	7.8	6.4
Total Contbd.	2,436.5	2,297.1	2,241.6	2,208.2	2,178.7	2,154.5	2,168.6	2,200.0	2,118.4	2,003.5	1,922.5	1,939.3	1,960.9
Wks.of Supply:													
At Box Plants	6.2	5.9	5.5	5.2	5.6	5.3	5.5	6.1	5.5	5.0	4.7	5.2	5.5
At Mill Sites	1.0	1.1	1.1	.9	.8	.7	.6	.5	.5	.5	.4	.4	.3
Total	7.2	7.0	6.6	6.1	6.4	6.0	6.1	6.6	6.0	5.5	5.1	5.6	5.8
	1979												1980
Linerboard:													
Box Plants	1,355.6	1,230.8	1,207.8	1,183.4	1,225.0	1,228.3	1,229.3	1,275.6	1,290.0	1,269.7	1,239.1	1,307.6	1,330.6
Mills	73.3	83.8	103.2	100.8	91.4	85.4	86.0	83.6	78.0	87.3	82.1	84.1	73.3
Total	1,428.9	1,314.6	1,311.0	1,284.2	1,316.4	1,313.7	1,315.3	1,359.2	1,368.0	1,357.0	1,321.2	1,391.7	1,403.9
Wks.of Supply	6.1	5.4	5.4	5.2	5.0	5.3	5.5	5.6	5.7	5.5	4.9	5.7	6.4
Corr. Mat'ls:													
Box Plants	497.8	467.8	454.5	467.9	492.4	511.7	516.6	550.9	549.7	548.8	525.8	528.2	545.7
Mills	24.9	32.6	32.0	28.1	28.1	20.5	22.3	20.9	18.4	21.1	18.3	21.0	19.9
Total	522.7	500.4	486.5	496.0	520.5	532.2	538.9	571.8	568.1	569.9	544.1	549.2	565.6
Wks.of Supply	4.9	4.5	4.4	4.4	4.3	4.8	5.0	5.3	5.3	5.1	4.5	5.0	5.7
Filler Board	6.4	7.3	6.6	6.2	5.5	5.7	5.4	6.1	6.1	7.0	8.3	6.0	5.7
Total Contbd.	1,960.9	1,825.3	1,806.8	1,789.2	1,845.5	1,854.7	1,862.8	1,939.1	1,945.3	1,938.4	1,876.9	1,953.1	1,978.5
Wks.of Supply:													
At Box Plants	5.5	4.8	4.7	4.6	4.5	4.9	5.0	5.2	5.3	5.0	4.5	5.2	5.9
At Mill Sites	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3
Total	5.8	5.1	5.1	5.0	4.8	5.2	5.3	5.5	5.6	5.3	4.8	5.5	6.2
	1980												1981
Linerboard:													
Box Plants	1,330.6	1,289.4	1,[illegible].6	1,218.7	1,321.7	1,392.8	1,485.8	1,526.2	1,478.0	1,426.7	1,292.3	1,267.3	1,373.8
Mills	73.3	85.1	[illegible].1	86.7	76.9	85.9	95.9	108.4	114.5	115.2	90.8	89.1	77.3
Total	1,403.9	1,374.5	1,[illegible].7	1,305.4	1,398.6	1,478.7	1,581.7	1,634.6	1,592.5	1,541.9	1,383.1	1,356.4	1,451.1
Wks.of Supply	6.4	5.3	[illegible]	5.4	5.7	6.5	7.1	7.6	7.4	6.3	5.4	5.9	6.7
Corr. Mat'ls:													
Box Plants	545.7	58[illegible]	[illegible]	555.1	593.1	608.3	630.9	618.4	579.3	515.7	457.1	439.1	499.0
Mills	19.9	20.8	[illegible].9	22.1	22.0	25.2	28.4	29.9	43.9	36.1	33.9	33.8	27.5
Total	565.6	609.0	577.3	577.2	615.1	633.5	659.3	648.3	623.2	551.8	491.0	472.9	526.5
Wks.of Supply	5.7	5.1	5.3	5.2	5.6	6.6	6.6	6.5	6.3	4.9	4.2	4.5	5.3
Filler Board:	5.7	4.2	3.8	4.0	4.1	3.8	3.8	3.6	4.9	3.5	3.0	2.8	4.2
Total Contbd.	1,978.5	1,990.8	1,905.3	1,890.2	2,020.5	2,116.1	2,248.2	2,290.6	2,224.9	2,100.5	1,879.9	1,835.6	1,984.0
Wks.of Supply:													
At Box Plants	5.9	5.0	5.1	5.1	5.4	6.2	6.6	6.8	6.6	5.4	4.7	5.1	5.9
At Mill Sites	.3	.3	.3	.3	.3	.3	.4	.5	.5	.4	.3	.4	.3
Total	6.2	5.3	5.4	5.4	5.7	6.5	7.0	7.3	7.1	5.8	5.0	5.5	6.2

Definitions are shown on page 32.

CONTAINERBOARD INVENTORY

AT BOX PLANTS AND MILL SITES



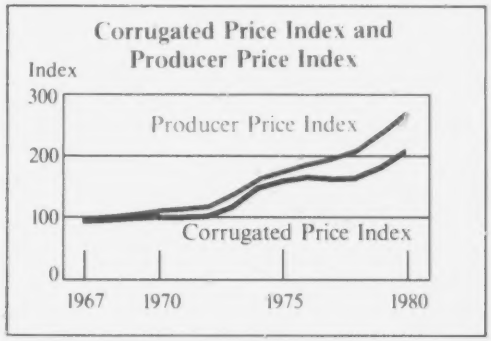


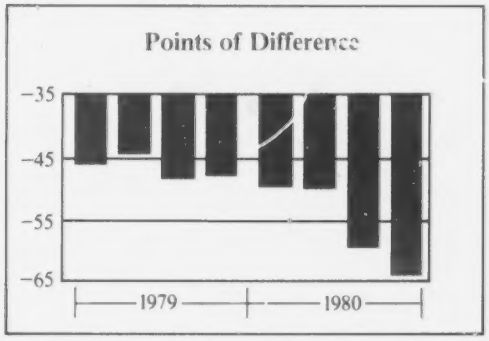
Definitions are shown on page 32.

CORRUGATED PRICE INDEX

BY QUARTER

YEAR	1ST QTR	2ND QTR	3RD QTR	4TH QTR	YEAR	B.L.S. P.P.I.
1960	98.8	98.2	96.3	97.0	97.4	94.9
1961	95.7	94.0	90.6	94.5	93.4	94.5
1962	94.9	97.1	95.5	96.2	95.9	94.8
1963	95.1	94.0	92.9	95.5	94.1	94.5
1964	95.1	94.5	92.7	94.2	94.0	94.7
1965	93.8	93.9	92.8	96.3	94.3	96.6
1966	96.7	98.2	97.8	100.4	98.3	99.8
1967	100.7	100.2	98.6	100.4	100.0	100.0
1968	101.9	101.0	99.3	102.0	101.1	102.5
1969	102.4	102.9	102.3	105.1	103.3	106.5
1970	105.3	104.9	103.8	105.0	104.8	110.4
1971	104.4	104.7	103.4	104.1	104.2	113.9
1972	104.2	106.7	107.0	110.8	107.4	119.1
1973	114.1	120.2	124.7	129.8	122.5	134.7
1974	135.4	147.7	161.0	170.6	153.2	160.1
1975	168.1	166.0	163.7	165.0	165.5	174.9
1976	169.0	170.9	168.9	169.6	169.6	183.0
1977	167.4	168.2	168.6	168.4	168.2	194.2
1978	164.7	165.7	166.9	174.5	168.1	209.3
1979	178.6	187.3	190.3	199.6	188.9	235.6
1980	209.7	214.3	212.9	214.4	212.8	268.6





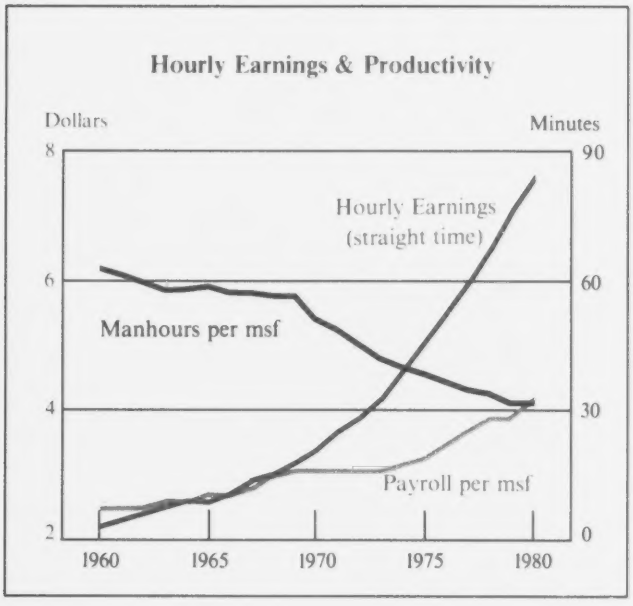
BY AREA

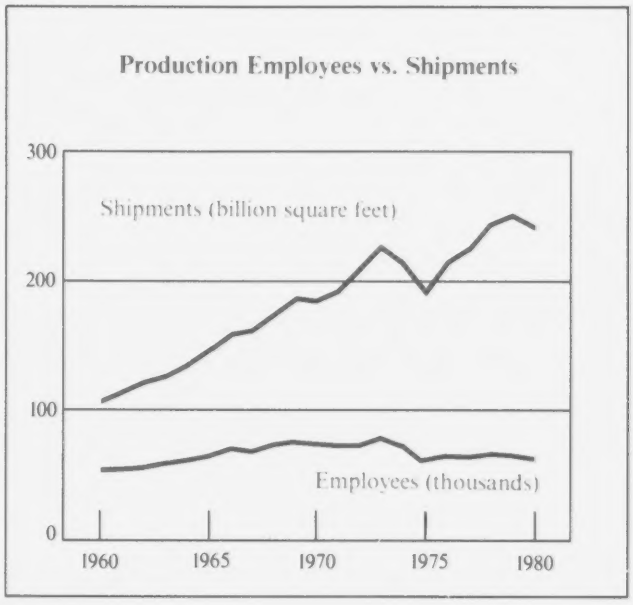
	Area One - Northeastern			Area Two - Southeastern			Area Three - East Central		
	1978	1979	1980	1978	1979	1980	1978	1978	1980
1st Quarter	157.5	170.6	203.2	163.6	176.3	211.8	165.1	178.6	205.7
2nd	156.9	178.5	205.9	164.1	186.3	214.1	166.6	185.4	206.9
3rd	158.5	182.5	203.1	163.9	188.4	209.7	167.6	188.4	204.1
4th	165.9	192.9	204.7	174.3	199.4	213.6	174.9	197.2	206.1
YEAR	160.0	181.1	204.2	166.6	187.5	212.4	169.0	187.2	205.7

	Area Four - North Central			Area Five - South Central			Area Six - Western		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
1st Quarter	168.3	183.7	213.8	167.8	179.8	210.8	169.7	187.1	219.0
2nd	168.0	192.4	217.2	167.6	187.8	213.7	176.0	200.6	236.3
3rd	168.8	193.5	212.8	168.0	190.5	210.1	180.4	205.1	244.7
4th	177.9	203.7	215.4	175.8	200.5	210.6	184.6	210.8	244.0
YEAR	171.1	193.2	214.7	169.5	189.5	211.3	178.1	201.2	236.3

Definitions are shown on page 32.

HOURS, EARNINGS AND PRODUCTIVITY





YEAR	Total No. of Employees	INDUSTRY AVERAGES							
		Hours per Week per Employee	Hourly Earnings			Earnings per Week per Employee	M Sq. Ft. Shipments per Wk. per Employee	Employee Hours per M Sq. Ft.	Payroll per M Sq. Ft. All Plants
			Total	Regular	Overtime				
1960	54,600	40.9	$2.224	$2.329	$3.238	$ 95.21	38.7	1.06	$2.46
1961	55,200	41.7	2.455	2.344	3.346	102.48	40.5	1.03	2.53
1962	57,400	41.5	2.529	2.418	3.435	104.82	41.4	1.00	2.53
1963	60,300	41.6	2.605	2.487	3.543	108.40	42.3	.98	2.56
1964	62,400	42.1	2.687	2.562	3.604	113.22	43.0	.98	2.63
1965	66,100	43.3	2.750	2.613	3.661	119.00	43.7	.99	2.72
1966	70,300	42.8	2.850	2.699	3.819	121.98	44.9	.95	2.71
1967	69,900	41.4	2.995	2.861	3.995	124.13	43.8	.95	2.84
1968	74,000	42.0	3.157	2.986	4.245	132.62	44.8	.94	2.96
1969	76,900	42.2	3.330	3.159	4.467	140.48	45.3	.93	3.10
1970	74,100	40.1	3.551	3.415	4.811	142.39	46.6	.86	3.06
1971	73,400	40.9	3.833	3.684	5.083	156.75	50.5	.81	3.10
1972	74,300	41.5	4.132	3.944	5.508	171.57	54.9	.76	3.13
1973	77,400	40.8	4.404	4.214	5.855	179.59	57.3	.71	3.13
1974	71,900	38.3	4.725	4.566	6.428	181.02	57.4	.67	3.16
1975	60,500	37.9	5.261	5.075	7.156	199.49	59.8	.63	3.33
1976	65,200	38.9	5.726	5.513	7.683	222.59	63.3	.61	3.52
1977	65,100	39.5	6.265	6.030	8.384	247.59	66.5	.59	3.72
1978	67,300	39.6	6.820	6.541	9.057	270.39	69.8	.57	3.88
1979	67,300	39.2	7.421	7.143	9.947	291.26	74.0	.53	3.94
1980	63,600	38.2	7.968	7.697	10.823	304.16	72.4	.53	4.20

The reports received from the members are advanced to represent the entire industry. The employees represented are production workers, truckers, chauffeurs, watchmen, engineers, maintenance workers, etc. The total does not include executives, supervisors, salespersons, clerical and office employees. The footage includes the total shipments of all converting plants but not sheet plants; however, sheet plant labor costs are included. The above data covers only the direct payroll including pay for hours not worked. It does not include cost of pensions, medical insurance, etc.

DEFINITIONS

	Page Reference
Areas: The United States is divided into six statistical Areas which are further divided into 19 Zones. The Areas and Zones are shown on page 11. The boundaries of Areas 4, 5 and 6 were modified in 1980, and all prior-year data has been amended accordingly	21, 22, 23, 30
Average Week: An average work week for statistical purposes consists of six working days	16, 22, 23
Basis Weight: The average weight of combined corrugated board per thousand square feet is derived by dividing containerboard consumption for corrugated board by corrugator production	20
Containerboard: Paperboard components from which corrugated and solid fibreboard are manufactured	26, 27, 28
Container Chip and Filler Board: Paperboard manufactured as a filler for solid fibre and paperboard for conversion into either single or multi-ply components for interior packing in corrugated or solid fibre boxes	26, 27
Converter and Sheet Plant: A converter makes corrugated board on one or more corrugating machines, and makes boxes from the board. A sheet plant buys corrugated board from a converting plant, and makes boxes from the board	17
Corrugated Price Index: The Corrugated Price Index is developed by dividing the total dollars of sales of all corrugated products by the square footage of these products, based on member company data only. The price per M square feet of all corrugated products shipped by members is then converted to an index, 1967=100	30
Corrugating Materials: Paperboard used as the fluted member of a corrugated product, usually .009 or .010 of an inch thick	26, 27, 28
Corrugator Production: The actual total square footage produced on corrugators during the year. It differs from shipments in that production includes waste and trim before fabrication	20
Filler Board: See Container Chip and Filler Board	26, 27
Industry: Any statistic termed "Industry," such as "Industry Shipments," is based upon information received from all manufacturers, both members and non-members of the Association	14, 15, 16, 17, 20
Kraft Linerboard: Fiber furnish contains not less than eighty percent virgin sulphate woodpulp, produced by the kraft (sulphate) process	26, 27
Linerboard: Paperboard used as a facing on corrugated or solid fibre products	26, 27, 28
Number of Plants: The data indicates the number of plants in each category which were in operation during all or any part of the year. This is not necessarily the number in operation at year-end	17
Points of Difference: Derived by subtracting the Corrugated Price Index from the Producer Price Index. Because Corrugated is less than the PPI currently, points of difference are expressed negatively	30
Producer Price Index: The Bureau of Labor Statistics' Producer Price Index represents the wholesale prices of about 2,000 commodities, 1967=100	30
Recycled Corrugating Material: Fiber furnish contains less than seventy-five percent virgin woodpulp	26, 27
Recycled Linerboard: Fiber furnish contains less than eighty percent virgin sulphate woodpulp	26, 27
Seasonally Adjusted Month: Actual shipments are seasonally adjusted using factors based on experience of the latest and preceding years	16
Seasonal Adjustment: The adjustment factor is a composite of the seasonal factors and the regression trading day adjustment factors. The adjustment is continually revised; factors used in 1978 and 1979 are not identical to those used in 1980	16
Semichemical Corrugating Material: Contains fiber furnish not less than seventy-five percent virgin woodpulp, produced by a semichemical process. Also includes kraft corrugating material in which the fiber furnish is not less than eighty percent virgin woodpulp that is produced by the kraft (sulphate) process	26, 27
Weeks of Supply: Obtained by dividing inventories by the average weekly usage in fibre box plants during the prior month excluding any holidays	28
Zones: The contiguous United States is divided into 19 statistical Zones, which are shown on page 11. The boundaries of Zones 9, 12, 13 and 18 were modified in 1980, and all prior-year data has been amended accordingly	24, 25